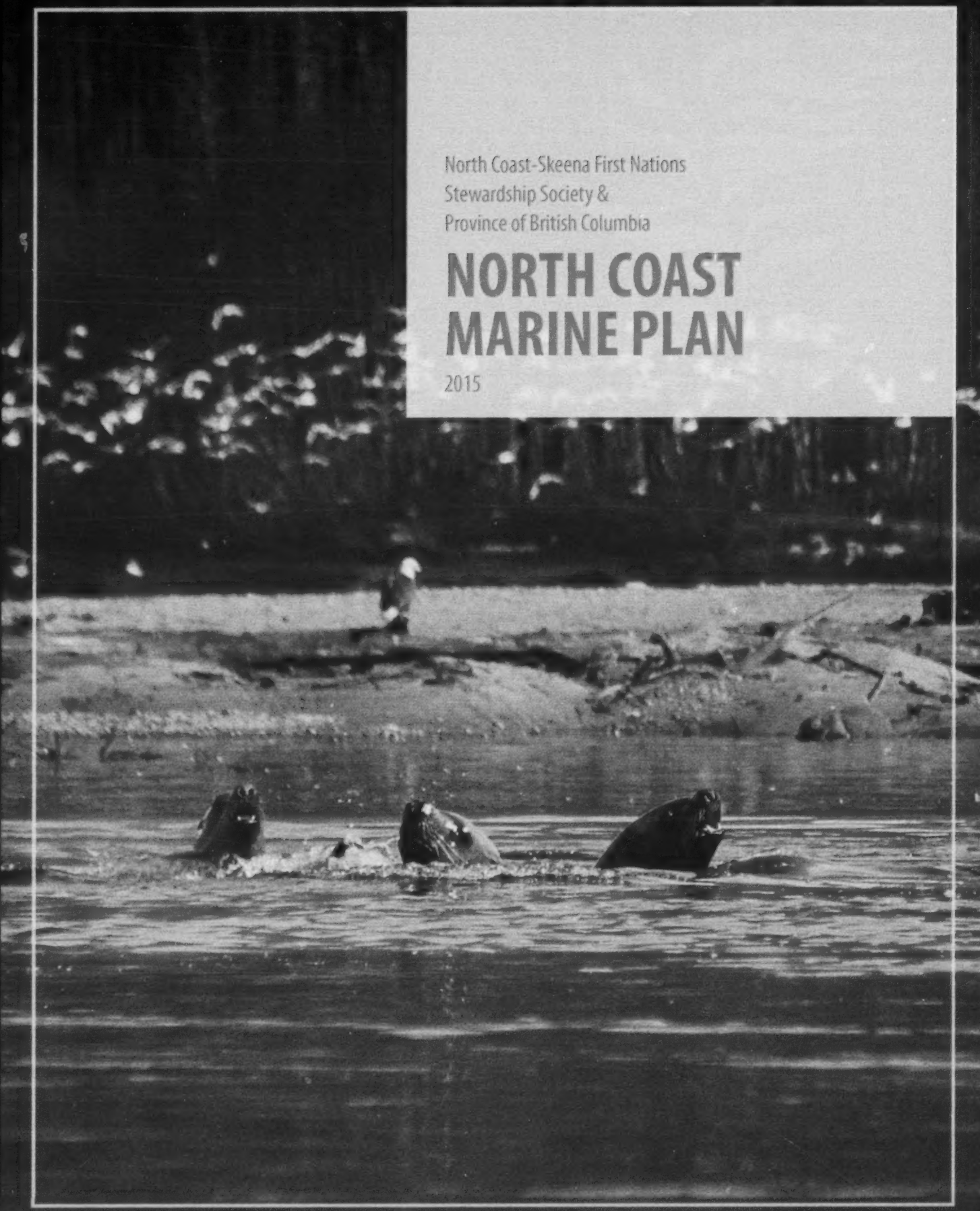

North Coast-Skeena First Nations
Stewardship Society &
Province of British Columbia

NORTH COAST MARINE PLAN

2015

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BRITISH COLUMBIA

MaPP

North Coast - Skeena First Nations Stewardship Society

North Coast Skeena First Nations
Stewardship Society &
Province of British Columbia

NORTH COAST MARINE PLAN

2015

Dear Reader,

On behalf of the North Coast-Skeena First Nations Stewardship Society and the Province of BC, we are pleased to present the final North Coast Marine Plan.

The North Coast Marine Plan is the result of over three years of collaborative planning by member and partner Nations of the North Coast-Skeena First Nations Stewardship Society: the Gitga'at, Gitxaała, Haisla, Kitsumkalum, Kitselas and Metlakatla Nations and the Province of BC, represented by the Ministry of Forests, Lands and Natural Resource Operations. We want to acknowledge the extensive input and work from First Nations and Provincial staff, the North Coast Marine Plan Advisory Committee, local governments, marine user groups, and members of the public. This plan reflects a wealth of knowledge and experience.

The North Coast Marine Plan was founded on an ecosystem-based management framework and used the best available science, Aboriginal and local knowledge. The Plan outlines a vision, objectives and strategies for the management of the North Coast coastal and marine areas into the future. This includes recommendations to inform decision makers from member and partner First Nations of the North Coast-Skeena First Nations Stewardship Society and Provincial agencies on uses and activities within the plan area. In the spirit of fully comprehensive integrated marine planning, we also commit to working with the federal government on issues that are of interest to the Government of Canada.

Successful implementation of the North Coast Marine Plan will require regular progress reviews and adaptation. It will require ongoing participation, support and commitment from the many individuals, communities and organizations who contributed to its development.

The MaPP planning process demonstrates that diverse interests can effectively work together to plan for healthy marine ecosystems and the long-term sustainable use and development of coastal and marine areas and resources in this unique and spectacular place.

Sincerely,

Steve Thomson
Minister of Forests, Lands and Natural Resource Operations

Robert Grodecki,
North Coast-Skeena First Nations Stewardship Society

DISCLAIMER

This plan is not legally binding and does not create legally enforceable rights between British Columbia and First Nations on the North Coast. This plan is not a treaty or land claims agreement within the meaning of sections 25 and 35 of the Canadian *Constitution Act, 1982*.

This plan does not create, define, evidence, amend, recognise, affirm, or deny any Aboriginal rights, Aboriginal title and/or treaty rights, or Crown title and rights, and is not evidence of the nature, scope, or extent of any Aboriginal rights, Aboriginal title, or Crown title and rights.

This plan does not limit or prejudice the positions British Columbia or First Nations on the North Coast may take in any negotiations or legal or administrative proceedings.

Nothing in this plan constitutes an admission of fact or liability.

Nothing in this plan alters, defines, fetters, or limits or shall be deemed to alter, define, fetter, or limit the jurisdiction, authority, obligations, or responsibilities of British Columbia or First Nations on the North Coast.

ACKNOWLEDGEMENTS

The North Coast Marine Plan represents the culmination of several years of dedicated work by dozens of people who represent the Gitga'at, Gitxaala, Haisla, Kitselas, Kitsumkalum, and Metlakatla First Nations, the Province of BC, and various marine sector interests.

The Gitga'at, Gitxaala, Haisla, Kitselas, Kitsumkalum, and Metlakatla First Nations and the Province of BC would like to recognize and thank the following individuals who played key roles in providing technical support, direction and oversight on the production of this document:

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North Coast Marine Advisory Committee: *Hussein Alidina, Mike Ambach, Jeff Beckwith, Karl Bergman, James Casey, Henry Clifton, Mairi Edgar, Dan Edwards, Robert Hauknes, Nick Heath, Tracy Hittel, Bill Johnson, Charles Justice, Paul Kariya, Evan Loveless, Hermann Meuter, Dave Nicholson, Jaime Scarrow, Michael Uehara, Vittorio Venturini, Mike Viverios, Andrew Webber, Janie Wray*

Marine Working Group: *G. Les Clayton, Robert Grodecki, Allan Lidstone, Chris Picard*

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North Coast Technical Team: *Steve Kachanoski and Karen Topelko (FLNR), Craig Outhet (NCSFNSS)*

North Coast-Skeena First Nations Stewardship Society Technical Staff: *Caroline Butler, Nicole Kaechele, Erin Mutrie, Allison Paul*

MaPP Support Staff: *Josie Byington, Megan Dickinson, Alan Dolan, Gilian Dusting, Fiona Kilburn, Jo Smith, Jillian Tamblyn, Michele Thomas*

Province of British Columbia: *Marjan Bagheri, Connie Chapman, Wendy McKittrick, Boris Tyzuk, Logan Wenham*

The Gitga'at, Gitxaała, Haisla, Kitselas, Kitsumkalum, and Metlakatla First Nations and the Province of BC also acknowledge the valuable input provided by members of the general public, who submitted comments through public open houses and the MaPP website. In addition, many people provided input on the draft plan during the Provincial and First Nations internal review processes.

The Gitga'at, Gitxaała, Haisla, Kitselas, Kitsumkalum, and Metlakatla First Nations and the Province of BC wish to acknowledge the financial support of the Gordon and Betty Moore Foundation through the MaPP Support Project at Tides Canada.

ACRONYMS

BC	British Columbia
BCMCA	British Columbia Marine Conservation Analysis
CFN	Coastal First Nations
DFO	Department of Fisheries and Oceans Canada
EBM	Ecosystem-Based Management
EEZ	Exclusive Economic Zone
FLNR	BC Ministry of Forests, Lands and Natural Resource Operations
GMZ	General Management Zone
ICS	Incident Command System
IUCN	International Union for Conservation of Nature
LOMA	Large Ocean Management Area
LRMP	Land and Resource Management Plan
MaPP	Marine Planning Partnership (for the North Pacific Coast)
MPA	Marine Protected Area
MPAC	Marine Plan Advisory Committee
NCSFNSS	North Coast–Skeena First Nations Stewardship Society
NSB	Northern Shelf Bioregion
PMZ	Protection Management Zone
PNCIMA	Pacific North Coast Integrated Management Area
RAAD	Remote Access to Archeological Data
SMZ	Special Management Zone

EXECUTIVE SUMMARY

The North Coast Marine Plan is the result of a cooperative planning process led by the Province of British Columbia and Gitga'at, Gitxaała, Haisla, Kitselas, Kitsumkalum, and Metlakatla First Nations, represented by the North Coast–Skeena First Nations Stewardship Society. This planning process is part of the broader First Nations-BC Marine Planning Partnership for the North Pacific Coast (MaPP) initiative. The purpose of the marine plan is to:

i. Provide a framework for joint or shared management of marine and coastal areas in the North Coast through an ecosystem-based approach to management and marine resource decision-making;

ii. Provide policy, detailed planning, and management direction regarding marine uses, activities and values throughout the plan area that are within the jurisdictional authority of BC and/or First Nations participating in this planning process;

iii. Support First Nations cultural and social wellbeing and continuity through the protection of cultural values, resources, and practices;

iv. Identify acceptable marine uses that support sustainable communities while protecting and, where necessary, restoring marine ecosystems;

v. Support marine economic development and provide direction for encouraging and managing future growth;

vi. Provide guidance for tenuring and marine resource use decisions in North Coast waters;

vii. Zone marine space for environmental conservation and economic activity.

Plan Overview

Chapters 1 and 2 provide an introduction to the plan, outlining the plan vision, jurisdictional limits and description of the plan area.

Chapter 3, Overarching Themes sets out objectives and strategies to guide the sustainable management of marine resources and activities captured within four themes:

3.1 Ecosystem-Based Management
3.2 Governance
3.3 Cumulative Effects Assessment
3.4 Climate Change Adaptation and Mitigation

Chapter 4, General Management Direction sets out objectives and strategies to guide the sustainable management of marine resources and activities captured within 14 key areas:

4.1 Compliance and Enforcement
4.2 Monitoring
4.3 Marine Protection
4.4 Marine Pollution
4.5 Marine Response
4.6 Tenured Activities: Land Policies and Procedures
4.7 Tenured Activities: Renewable Energy

4.8 Tenured Activities: Shellfish and Marine Plant Aquaculture
4.9 Tenured Activities: Marine-based Forestry Operations
4.10 Tourism and Recreation
4.11 Marine Fisheries Economy
4.12 Economic Well-Being
4.13 Heritage Sites and First Nations Cultural Areas
4.14 First Nations Resource Use and Management

Chapter 5, Marine Spatial Plan. Marine spatial zoning is intended to inform decision-makers and proponents of recommended uses when considering resource and tenure decisions for activities within the jurisdictional mandate and authority of the provincial and First Nations governments.

There are three types of zones in the NC Marine Plan:

The **General Management Zone (GMZ)** allocates space for a wide range of marine uses and activities that are governed or managed using an EBM framework. 78.29 percent of the plan area is identified as GMZs.

The **Special Management Zone (SMZ)** allocates space for high priority and/or high potential sustainable marine uses and activities.

In the North Coast Marine Plan, 4.83 percent of the planning area is identified as SMZs.

- Shellfish Aquaculture SMZs make up 0.37 percent of the North Coast plan area
- Tourism and Recreation SMZs make up 1.75 percent of the North Coast plan area
- Renewable Energy SMZs make up 2.54 percent of the North Coast plan area
- Cultural SMZs make up 0.17 percent of the North Coast plan area

The **Protection Management Zone (PMZ)** allocates space primarily for conservation purposes or objectives, and may provide a basis for protecting localised conservation values. The PMZs recommended in this marine plan are not designated marine protected areas (MPAs) and do not provide recommendations on marine uses and activities outside of provincial regulatory authority. PMZs will make important contributions to the Canada-BC-First Nations MPA network planning process for the Northern Shelf Bioregion and are subject to further consultation and evaluation through that process. 12.76 percent of the plan area is identified as PMZs.

Each SMZ and PMZ has an accompanying table that identifies marine uses and activities that are considered acceptable, conditionally acceptable, or not acceptable within the zone. For every activity that is considered conditionally acceptable, condition statements are provided. Additional considerations are also identified to help inform decision-makers during future designation processes. Aboriginal uses, including practices for food, social and ceremonial purposes, continue in accordance with legal obligations.

Chapter 6, Plan Implementation and Monitoring. Objectives and strategies in this Marine Plan will be implemented on a priority basis. The goal is to implement all strategies in the marine plan over the longer term, as funding and other resources permit.

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NORTH COAST MARINE PLAN VISION STATEMENT

The ecological and cultural richness of the North Coast region is maintained and enhanced. The diverse territories and productive marine resources support healthy and prosperous communities for the benefit of current and future generations. Governance structures are collaborative, cooperative and integrated and enable ongoing public participation in plan implementation. Management frameworks incorporate evolving information and adapt to changing social, technological and environmental conditions.

Photo by Birgitte Bartlett

CHAPTER 1: INTRODUCTION

Photo by Jessica Hawryshyn

1.1 Purpose of the Plan

The purpose of the North Coast Marine Plan is to provide recommendations for achieving ecosystem health, social and cultural wellbeing, and economic development through an ecosystem-based approach to planning and management. This plan provides recommendations for developing and maintaining resilient marine ecosystems and sustainable economies for North Coast communities. The plan focuses on direction for managing marine areas, uses and activities that are informed by First Nations strategic marine use plans and provincial strategic priorities, and where the Province of British Columbia (BC) has jurisdiction.

1.2 Plan Area Description

The North Coast plan area includes an impressive stretch of coastline that is indented with deep fjords and dotted with thousands of islands. It is a region of profound beauty, significant ecological diversity and remarkable cultural richness. Prince Rupert, Terrace and Kitimat are the largest communities in the North Coast plan area, and support an overall population of approximately 42,000 people. Communities range in size from 13,000 individuals in Prince Rupert to villages of several hundred to even smaller settlements. Many of the smaller communities in the plan area are predominantly First Nations. For example, the Gitga'at village of Hartley Bay is 99% First Nations (Source: 2006 Community Profiles).

The coastal boundaries of two Regional Districts are within the plan area: Kitimat-Stikine and Skeena-Queen Charlotte. First Nations make up a large component of the North Coast population. The Kitimat-Stikine Regional district population consists of 32% First Nations, and the Skeena-Queen Charlotte Regional district population consists of 41% First Nations (Statistics Canada 2006).

The North Coast plan area is the most northern of the four sub-regions for which the Marine Planning Partnership for the North Pacific Coast (MaPP) is developing plans (Figure 1). The North Coast plan area extends from Portland Inlet to the south end of Aristazabal Island, where it has an overlap with the northern boundary of the Central Coast plan area. The western edge of the North Coast plan area borders the Haida Gwaii plan area (Figure 2).

Photo by Jessica Hawryshyn

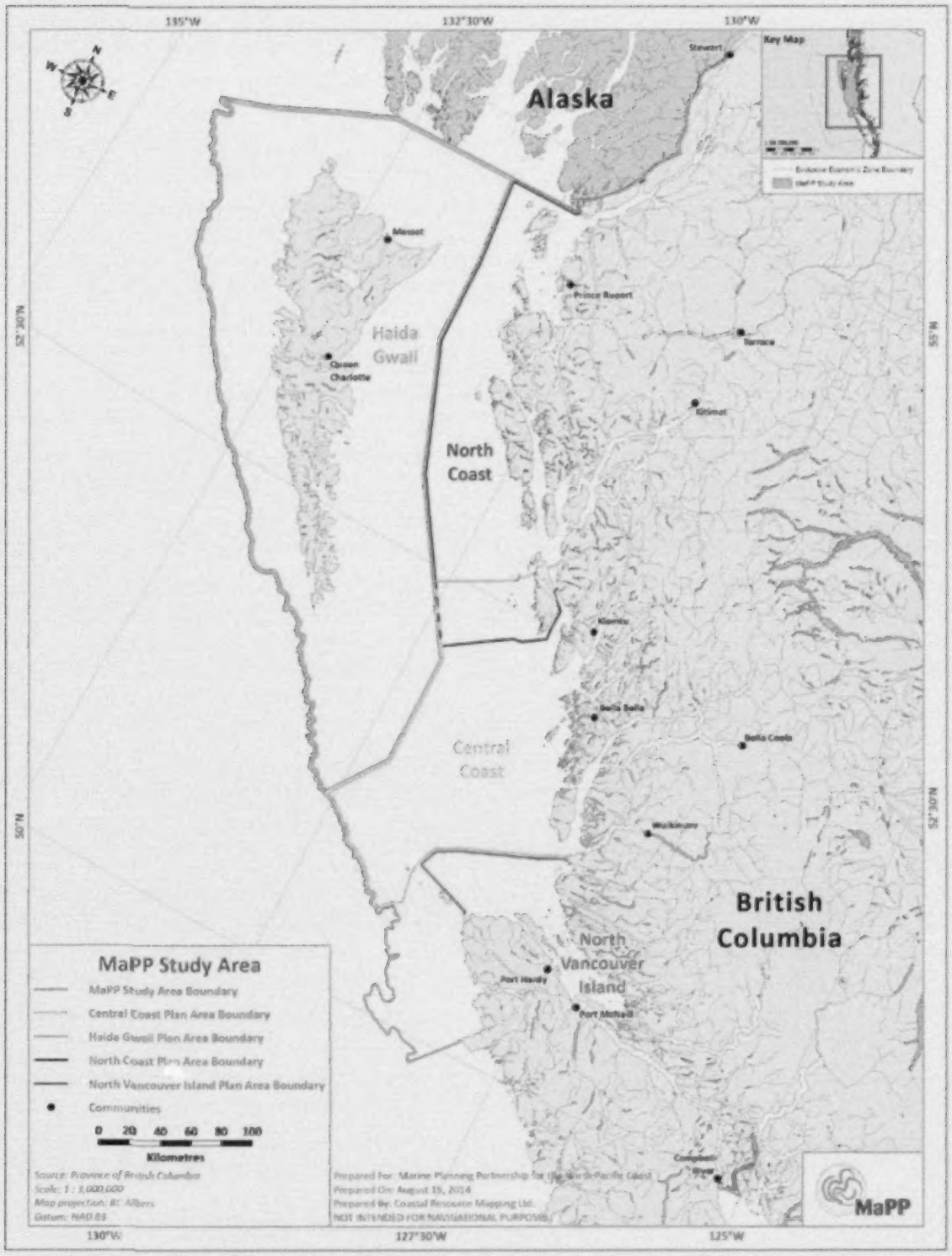


Figure 1. Marine Planning Partnership for the North Pacific Coast (MaPP) study area

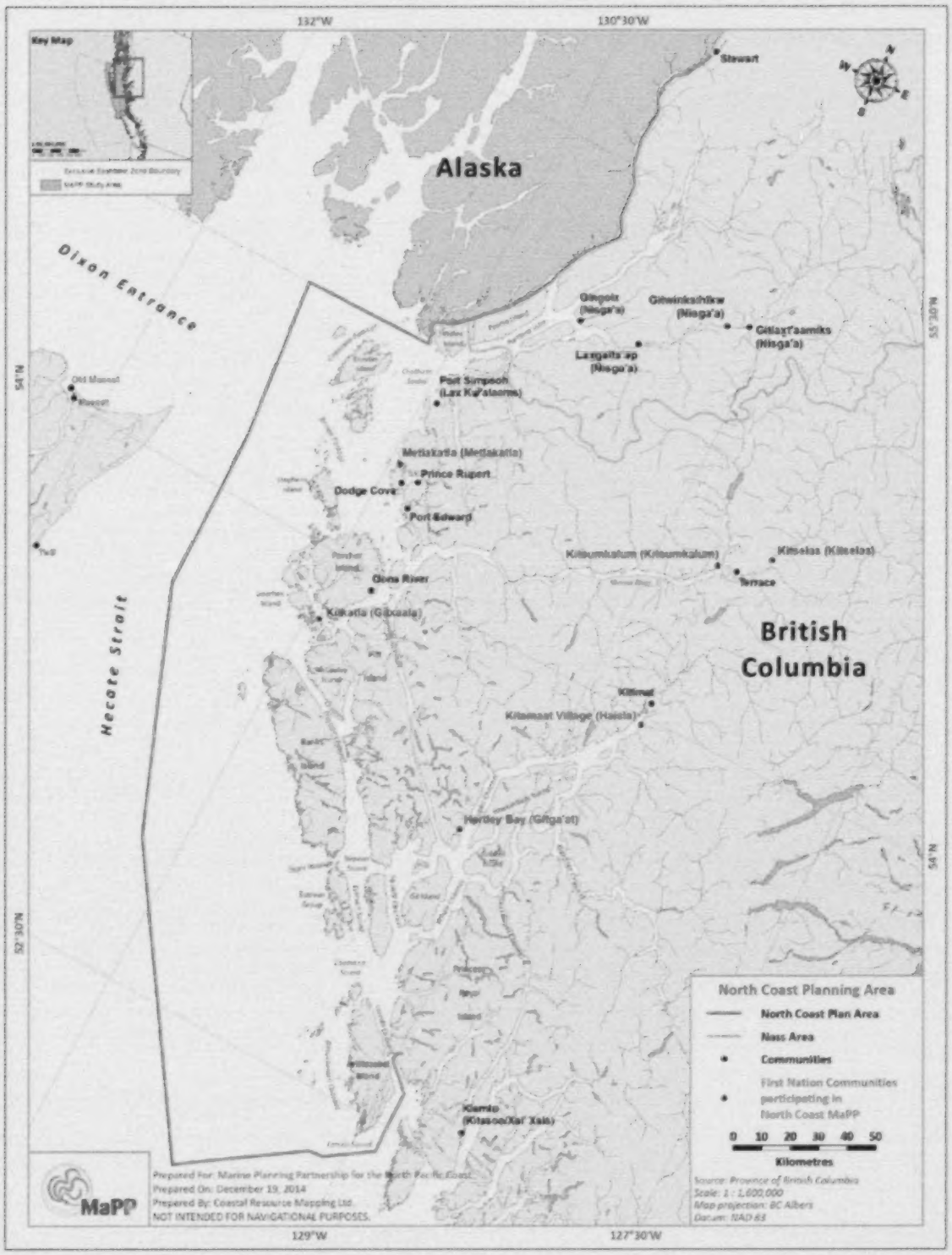


Figure 2. North Coast plan area boundary

First Nations have managed the territories and resources of the North Coast for millennia, and continue to rely on the bountiful and diverse ecosystems of the coast to sustain their vibrant cultures and economies. First Nations on the North Coast have distinct cultural and spiritual heritages that are intricately linked to the marine environment and the long-standing sustainable use and management of marine resources.

The marine plan area includes the territories of the Gitga'at, Gitxaala, Haisla, Kitselas, Kitsumkalum, and Metlakatla First Nations, who were represented by the North Coast–Skeena First Nations Stewardship Society, in this planning process. The Heiltsuk and Kitasoo Nations also have territories in the North Coast plan area but are participating in the MaPP process in other sub-regions. The Lax Kw'alaams First Nation has territory in the plan area but did not directly participate in the development of this plan.

As well, the marine plan area includes areas that are covered by the Nisga'a Treaty, a constitutionally-protected agreement, entered into by the Nisga'a Nation, British Columbia and Canada. Those areas include parts of the Nass Area which includes the Nass Wildlife Area, which, in turn, includes Nisga'a Lands which are owned and governed by the Nisga'a Nation, and the waters and submerged lands of these areas are subject to the provisions of the Nisga'a Treaty.

The North Coast is physically complex and supports a range of ecosystem types, including important estuaries that support distinct marine ecosystems and species. The diverse ecosystems provide spawning and/or schooling areas for fish, including pelagic species such as salmon, eulachon and herring. The plan area is also important for a variety of seabirds, marine mammals and other marine fauna and flora. In addition, the North Coast provides important cetacean habitat, some of which has been identified as critical habitat for Humpback Whales and potential critical habitat for Killer Whales.

A wide range of economic activities occur within the North Coast plan area. Commercial fisheries and associated processing facilities, and logging have supported communities along the coast since the early 1900s. These activities continue to be important to the wellbeing of coastal communities. Port activities centred around the communities of Prince Rupert, Kitimat and Stewart, and an active recreational fishing and tourism sector, continue to be strong economic drivers in the area.

The North Coast is currently subject to intensive development pressure, with proposals for development for a variety of industrial uses including Liquefied Natural Gas, port development and expansion, and oil export. Renewable energy projects, such as the Naikun Wind energy project, have also been proposed in the plan area. Proposed major projects are subject to the federal and/or provincial environmental assessment processes due to the potential environmental, economic, social, heritage and health effects that may occur during the lifecycle of the project.

1.3 Marine Planning Partnership for the North Pacific Coast

The North Coast Marine Plan was developed through collaboration between the Province of British Columbia, as represented by the BC Ministry of Forests, Lands and Natural Resource Operations, and First Nations in the North Coast plan area, represented by the North Coast–Skeena First Nations Stewardship Society. The strategic marine use plans of each of the Gitga'at, Gitxaała, Haisla, Kitselas, Kitsumkalum, and Metlakatla First Nations provided a foundation for the development of this plan.

Each of the six First Nations involved in plan development and represented by the North Coast–Skeena First Nations Stewardship Society is a distinct Nation. However, between the member Nations and within the planning region there is recognition of a number of common issues and priorities, and shared commitment to the collaborative protection and sustainable use of North Coast territories and resources.

This plan was prepared as part of the Marine Planning Partnership for the North Pacific Coast (MaPP) initiative, whose partners are the Province of British Columbia and 18 member First Nations, which are represented by three First Nations organisations: the Coastal First Nations Great Bear Initiative, the North Coast–Skeena First Nations Stewardship Society, and the Nanwakolas Council. The MaPP initiative was formalised in November 2011, through a Letter of Intent between the provincial government and First Nations organisations. The intent letter established the approach to regional frameworks and sub-regional planning, confirmed the nature of collaboration between the parties, and outlined joint management structures and anticipated outputs for the planning process. First Nations initiated this partnership with the provincial government to expand upon other planning processes underway or completed, particularly the Pacific North Coast Integrated Management Area (PNCIMA) process, the Land and Resource Management Plan (LRMP) process, and First Nations marine planning.

The North Coast Marine Plan has links to the three other MaPP sub-regional planning initiatives and a MaPP Regional Action Framework. Sub-regional marine plans have been developed for Haida Gwaii, the North Coast, the Central Coast and North Vancouver Island. The MaPP Regional Action Framework establishes regional actions collectively supported by the Provincial and First Nations Governments that are most appropriately implemented at a regional scale and that are consistent with, and support, sub-regional plan recommendations. It allows for the harmonisation of sub-regional products, the coordination of regional implementation and monitoring, and the coordination of regional marine protection objectives.

At the formation of MaPP, the partners agreed on an Ecosystem-based management (EBM) approach to marine planning. EBM recognises the magnitude of interactions within an ecosystem and places human activities and impacts into the ecosystem management framework. EBM strives toward the holistic perspective of First Nations resource management approaches, and is consistent with provincial government direction in resource management. Integrated marine planning is an effective delivery tool for EBM due to its ability to formulate multiple objectives, integrate species management strategies and incorporate strategies for dealing with uncertainty. The MaPP EBM framework is built on principles of ecological integrity, human wellbeing, and governance and collaborative management (see Section 3.1 Ecosystem-Based Management).

1.4 Relationship of the Plan to Aboriginal Rights, Aboriginal Title and Treaty Rights

The participation of the Gitga'at, Gitxaała, Haisla, Kitselas, Kitsumkalum, and Metlakatla First Nations in the MaPP initiative and in the joint development of the plan, is based on the position that their involvement is without prejudice to their assertion of rights (including title) to the lands, waters, air and resources within their marine territories. These Nations also acknowledge that neighbouring Nations may also hold Aboriginal rights, Aboriginal title or existing Treaty rights, to certain areas within the planning area. The Province of British Columbia and the Gitga'at, Gitxaała, Haisla, Kitselas, Kitsumkalum, and Metlakatla First Nations acknowledge that the plan does not, therefore, create, recognise, define, deny, limit, abrogate or derogate from, or amend, Aboriginal rights and Aboriginal title, and does not define or limit the jurisdiction of the Gitga'at, Gitxaała, Haisla,

Kitselas, Kitsumkalum, and Metlakatla First Nations. The Province of British Columbia also acknowledges that the plan does not in any way effect the rights and obligations set out in the Nisga'a Treaty.

It is also important to note that this North Coast Marine Plan:

- does not relieve the Crown or any resource development proponents of any legal obligation to consult under section 35 (1) of the *Constitution Act, 1982*, with respect to the grant of specific authorisation under federal or provincial legislation, to use or dispose of land or resources;
- does not relieve the Crown of any obligation to consult pursuant to the Nisga'a Treaty;
- does not alter the Province of British Columbia and First Nations referral obligations under existing agreements or determine the need for or level of engagement under existing agreements;
- does not limit the scope or nature of negotiations or legal or administrative proceedings between British Columbia and the Nations;
- does not include admissions of fact or liability by either British Columbia or the Nations;
- is not a legally binding document and does not create legally enforceable rights between the parties; and
- is a policy document, intended to guide, but not fetter, decision-makers.

1.5 Scope and Jurisdiction

The *Constitution Act, 1867* defines the federal–provincial distribution of legislative powers in Canada (also known as the division of powers), including the scope of the power of the Parliament of Canada and the powers of each provincial legislature or assembly. Without formal federal government involvement in the MaPP planning process, this division of power limits the Province from endorsing outcomes that it considers to be the jurisdiction and mandate of the federal government under the *Constitution Act*. However, the Province can support and implement components of the plan where, as between British Columbia and Canada, the Province has some jurisdiction.

A Supreme Court of Canada decision in 1984 (the Strait of Georgia Reference) held that, when British Columbia entered Confederation in 1871, the Province consisted of all British territories, including dry land, coastal straits and submerged lands. Thus, as between British Columbia and Canada, British Columbia owns the waters and submerged lands of Juan de Fuca Strait, the Strait of Georgia, Johnstone Strait and Queen Charlotte Strait and the waters and submerged lands between major headlands (i.e., bays, estuaries and fjords).

Furthermore, the North Coast Marine Plan covers the territories of the member and partner Nations of the North Coast–Skeena First Nations Stewardship Society: Gitga'at, Gitxaala, Haisla, Kitselas, Kitsumkalum, and Metlakatla First Nations. First Nations laws and traditions hold the Nations responsible for ensuring that the natural and cultural heritage of their territory is passed on to future generations. The marine plan area also includes areas that are covered by the Nisga'a Treaty, a constitutionally-protected agreement, entered into by the Nisga'a Nation, British Columbia and Canada. Those areas include the Nass Area, which includes the Nass Wildlife area, which, in turn, includes Nisga'a Lands which are owned and governed by the Nisga'a Nation, and the waters and

submerged lands of these areas are subject to the provisions of the Nisga'a Treaty. The Nisga'a Treaty contains various governance and other provisions that deal with issues related to the North Coast Marine Plan.

Similar to land use plans, the Marine Plan seeks to develop a framework, for the future, for joint, shared and collaborative management of marine and coastal areas around the North Coast. This plan focuses on the marine areas and uses where, as between Government of British Columbia and Canada, the Province has legal jurisdiction and regulatory authority, namely the foreshore (i.e., the intertidal zone), coastal "inland waters" on the outer coast, and the lands covered by these waters.

Elements of the North Coast Marine Plan that relate to the Crown are subject to the authority of the ministers of the governments of Canada and British Columbia, as set out by Canadian law, where applicable. The plan does not make recommendations on matters that the Province believes are solely within federal jurisdiction.

1.6 Issues Not Addressed in the Marine Plan

The main body of the North Coast Marine Plan describes areas of agreement between the Gitga'at, Gitxaała, Haisla, Kitselas, Kitsumkalum, and Metlakatla First Nations and the Province of British Columbia. There are, however, a number of areas of disagreement between the parties; discussions are ongoing to resolve these issues.

The First Nations listed above and Province of British Columbia currently have different views on the following issues:

1. aspects of the recreational fishing industry (including impacts, growth and accountability);
2. maintenance of the Order in Council No. 174, 2008, prohibiting the disposition of land for the purpose of finfish aquaculture in or on the tidal waters of the Province of British Columbia that are north of 52°50′ latitude;
3. presence of oil tankers in north coast waters and increased large vessel traffic in the North Coast plan area;
4. recognition of First Nations enforcement authority;
5. First Nations resource use, including the sale and trade of fish for economic purposes; and
6. implementation of zoning and spatial planning in First Nation Marine Use Plans and integration of same into future planning processes.

These are important issues related to North Coast marine planning and management, and each of the governments recognise the importance of reconciling areas of disagreement, wherever possible. In the interim, both parties have supported moving forward on the areas of agreement described in this document.

MaPP partners are exploring structures and venues for dialogue regarding these outstanding issues. Enduring, collaborative governance structures will provide some opportunities for discussion of key areas of concern. Engagement of other relevant agencies and governments will occur where appropriate.

CHAPTER 2: PLANNING APPROACH

Photo by Gitga'at Guardian Program

2.1 Process Overview

The MaPP North Coast planning process covered a period of more than two years from the initiation of the Technical Team in March 2012 to plan finalisation. First Nations and the Province of British Columbia collaborated on the development of all components of the North Coast Marine Plan. The Marine Planning Coordinators from the Gitga'at, Gitxaala, Haisla, Kitselas, Kitsumkalum, and Metlakatla First Nations provided direction to the North Coast Skeena First Nations Stewardship Society, drawing from the strategic marine use plans of each Nation. The Coordinators reviewed all drafts of the North Coast Marine Plan; Draft 3.1 was reviewed more broadly within each First Nations community. The board of the North Coast–Skeena First Nations Stewardship Society, which involved leadership representation from the member and partner Nations, also reviewed the plan. Draft 2 was reviewed by provincial staff from several ministries, including: Forests, Lands and Natural Resource Operations; Environment; Agriculture; Energy and Mines; Aboriginal Relations and Reconciliation; Jobs, Tourism and Skills Training, and; Transportation and Infrastructure.

The general planning process was as follows:

Step 1: Develop and Approve Work Plan. This included confirmation of specific sub-regional plan outputs and a general timeline for the completion of work developed by the MaPP Marine Coordination Team.

Step 2: Establish a Sub-Regional Marine Plan Advisory Committee (MPAC). This involved soliciting requests for nominations to MPAC, screening nominations and appointing members and alternates.

Step 3: Assemble Information for Plan Topics. The Technical Team and MaPP contract staff initiated the collection and preparation of information that was applicable to plan development.

Step 4: Hold Information Open Houses in Local Communities. Open houses on the MaPP initiative and the plan development process were held in Kitimat and Prince Rupert.

Step 5: Prepare and Present Draft Plan Components to MPAC. The Technical Team presented a variety of draft plan components to MPAC at various meetings. Verbal advice was documented in an Advice Log, along with subsequent written input.

Step 6: Assemble and Present Preliminary Plan (Draft 1) to MPAC. The Technical Team reviewed MPAC advice and assembled revised plan components into a preliminary draft plan (Draft 1). The Draft 1 preliminary plan components were presented at the September and November 2013 MPAC meetings.

Step 7: Assemble and Present Preliminary Plan (Draft 2) to MPAC. The Technical Team incorporated MPAC advice, along with additional information from MaPP studies and frameworks, into a Draft 2 plan, which was presented to MPAC in December 2013.

Step 8: Conduct Internal Review of Plan (Draft 2). Internal reviews of the Draft 2 plan were completed by provincial government ministries and First Nations that were participating in plan development.

Step 9: Revise plan. The Technical Team incorporated MPAC advice and advice received from internal review into Draft 3 of the plan.

Step 10: Present Plan (Draft 3) to MPAC. The Technical Team presented the Draft 3 plan to MPAC to identify changes made and document outstanding issues that required resolution for MPAC member support. This meeting was followed by discussions with specific parties to address plan support.

Step 11: Solicit Broad Feedback (Draft 3.1). This consisted of public open houses/meetings, and a public review period to receive comments on Draft 3.1. During this period, discussions were held with First Nations and stakeholder groups who did not participate in MaPP.

Step 12: Complete Plan Assessment. Prior to plan approval, an assessment of the potential environmental, socio-economic and cultural implications of the plan was completed using a multiple accounts analysis approach that considered both spatial and a-spatial planning objectives, strategies and associated recommendations. The results of this assessment were used to further refine planning outcomes and to help inform decision-makers tasked with approving the plan.

Step 13: Complete Revisions. Based on ongoing internal and external review of the plan, outstanding revisions were completed.

Step 14: Finalise Plan. This included determining the level of support by MPAC participants and final review by First Nations and the Province of British Columbia

2.2 Marine Plan Advisory Committee

Consistent with the MaPP Letter of Intent, the North Coast Technical Team established a Marine Plan Advisory Committee to provide ongoing stakeholder input on plan documents and products. Invitations were sent to marine stakeholder groups and Regional Districts, along with nomination forms and the MPAC Terms of Reference. MPAC members and alternate members were screened and selected, and participant funding opportunities were provided to all members. All members agreed to comply with the Terms of Reference, which included a code of conduct, general work plan and MPAC meeting schedule.

Marine interests represented by MPAC were forestry operations, commercial tourism and recreation, conservation, shellfish aquaculture, local government, public recreation, recreational fishing services, commercial fisheries and renewable energy. Some MPAC members represented aggregations or associations of organisations with similar interests, while other members provided specialised expertise.

The first MPAC meeting was held in June 2012. MPAC met approximately every two to three months until June 2014. A record of MPAC membership, meeting dates and topics is provided in Appendix 2. Meetings were co-chaired by the joint Technical Team leads and were facilitated by an independent facilitator. All advice received, including verbal feedback at meetings and written comments on distributed material, was recorded and tracked.

Throughout the plan development process, MPAC members were encouraged to share draft plan products with constituents (as applicable) in their sectors and communities, and to provide information and feedback to the process from those exchanges. Throughout the process, a standing offer to meet with stakeholder groups, as requested, was maintained.

All MPAC meetings were advertised on the MaPP website, and both the agenda and a general meeting summary for each meeting were posted on the MaPP website.

2.3 Public Engagement

Information open houses were held in July 2012 and May 2014 in Prince Rupert and Kitimat to introduce the general public to the MaPP initiative and the North Coast planning process. The open houses were advertised through the MaPP website, e-newsletter, media and posters, and by MPAC members.

2.4 Management and Decision-Making Structures

The planning process involved a number of joint management and decision-making structures (Figure 3):

- **Executive Committee**: an executive-level committee comprised of ministers or deputy/assistant deputy ministers from the Province of British Columbia and chiefs or executive-level representatives of the Coastal First Nations Great Bear Initiative, North Coast–Skeena First Nations Stewardship Society and the Nanwakolas Council. The Executive Committee helped resolve high-level issues as they arose and signed the Implementation Agreements for the sub-regional marine plans.
- **Marine Working Group**: a high-level regional advisory body comprised of sub-regional representatives from the Province of British Columbia, Central Coast Indigenous Resource Alliance, Council of the Haida Nation,

North Coast–Skeena First Nations Stewardship Society and Nanwakolas Council. The Marine Working Group provided strategic direction and executive oversight to MaPP regional and sub-regional planning work.

- **Marine Coordination Team**: a regional coordinating body comprised of senior technical staff from the Province of British Columbia, Coastal First Nations and the Nanwakolas Council. The Marine Coordination Team provides guidance to the technical teams and reports to the Marine Working Group.
- **Sub-Regional Technical Teams**: four technical teams co-led by sub-regional representatives from First Nations and the Province of British Columbia. The sub-regional Technical Teams developed the sub-regional marine plans. In the North Coast sub-region, the planning process was co-led by representatives of the North Coast–Skeena First Nations Stewardship Society and the Province of British Columbia.

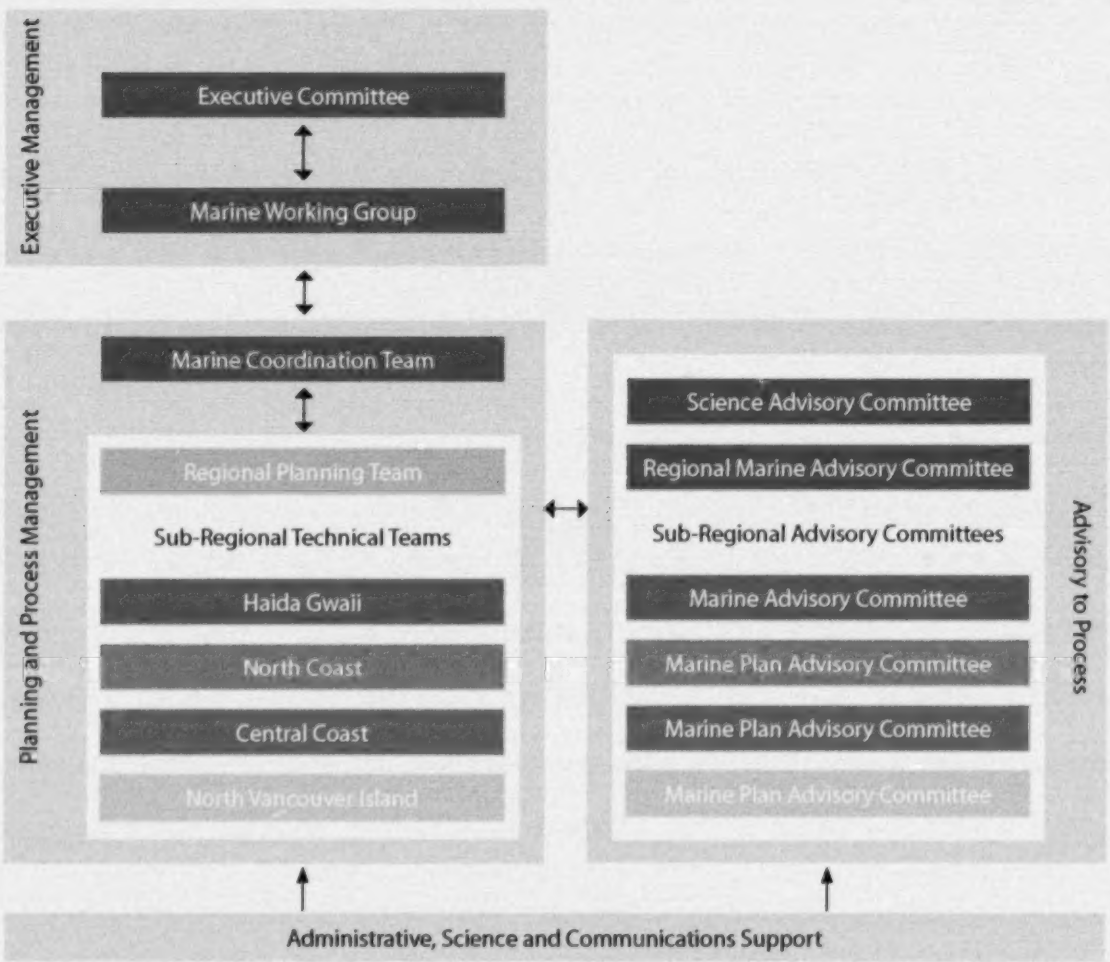


Figure 3. Marine Planning Partnership for the North Pacific Coast (MaPP) organisational structure

2.5 Information Gathering

The North Coast Marine Plan was developed using information from multiple sources compiled and analysed by the joint Technical Team and contract support. Key information and direction was provided by First Nations strategic marine use plans and provincial planning and policy documents. Additional information was drawn from:

- government reports and publications,
- academic literature,
- industry or sector publications and submissions,
- discussions with experts, and
- Aboriginal and local knowledge.

Regional-scale efforts to compile and analyze information included the development of a number of background studies and reports, such as a regional pollution assessment, a regional infrastructure inventory and gaps assessment, a governance assessment, and a list of potential Ecosystem Based Management indicators for plan effectiveness monitoring.

The plan was also informed by data sets that were made available through the British Columbia Marine Conservation Analysis (BCMCA). The data sets were further supplemented with information on forestry operations, diving areas, high value commercial tourism and recreation areas, and local zoning that was provided by plan participants. Relevant background scientific reports and technical documents from the Pacific North Coast Integrated Management Area (PNCIMA) process were also used. In order to compile and summarise relevant information for the North Coast plan area, a *Current Conditions and Trends* document was prepared. A list of the key reports and data sources used in the plan is provided in the References section.

Photo by Mike Ambach

To support planning, MaPP developed the "Marine Planning Portal" using the SeaSketch application. The Marine Planning Portal is an online mapping and data viewing tool that allows users to look at many different data layers together to learn more about the North Pacific Coast. The portal has more than 250 data layers including administrative boundaries, species, habitats and marine uses. It is designed to aid with the planning process and educate and inform users about the ecology and human uses and activities in the marine environment within the MaPP study area.

Information and product review was also conducted by the MaPP Science Coordinator and a Science Advisory Committee, an external pool of science and technical experts established to provide expert advice. As per the terms of reference, the committee, with up to 10 scientists, is knowledgeable in marine ecology, ecosystem services, fisheries science, spatial analysis, marine spatial planning, ecosystem-based management, economics, traditional ecological and local knowledge, and social sciences. Members are recognized for their expertise in one or more of these fields and their particular familiarity with British Columbia's marine environment.

2.6 Related Planning Initiatives

Development of the North Coast Marine Plan was informed by a number of related planning initiatives.

Marine Protected Area Network Planning

In 2011, federal, provincial and territorial governments released the National Framework for Canada's Network of Marine Protected Areas (Government of Canada 2011). The Framework provides strategic direction for the design of a national network of marine protected areas (MPAs) that will be composed of a number of bioregional networks. The MaPP study area is located within the Northern Shelf Bioregion, one of 13 ecologically defined aquatic bioregions in Canada.

In 2014, the Canada-British Columbia Marine Protected Area Network Strategy (the Strategy) was released. Consistent with the national framework, the Strategy outlines a vision and goals that will guide collaborative efforts to conserve a range of important marine values. Network planning will begin in the Northern Shelf Bioregion (NSB). The network of MPAs for the NSB will be designed collaboratively with federal, provincial, and First Nations governments, with input from local governments, stakeholders, and the public.

The North Coast Marine Plan provides recommendations for protection management zones (PMZs) within the North Coast plan area. The PMZs are not designated marine protected areas. However, the work undertaken during the planning process to assemble and analyze baseline data, spatially identify ecological, cultural and First Nations values, to identify current uses and activities and future economic opportunities, and to recommend management objectives will make important contributions to the MPA network planning process. The PMZs are presented in Chapter 5.

Pacific North Coast Integrated Management Area (PNCIMA)

The Government of Canada initiated integrated oceans management as a result of the *Oceans Act*, which came into force in 1997. Five Large Ocean Management Areas (LOMAs) have been selected to pilot the integrated management approach across Canada. For each LOMA, a range of governments, organisations and interested

parties work together to plan for long-term strategic management of the area. PNCIMA is the LOMA set aside on the North Pacific Coast for strategic level, federally led marine planning. The MaPP study area is within the PNCIMA boundary.

The PNCIMA plan is the product of a collaborative process led through an Oceans Governance Agreement between the federal government, Province of British Columbia and First Nations of the Pacific North Coast (as represented by Coastal First Nations (CFN) and the North Coast-Skeena First Nations Stewardship Society). The PNCIMA plan is high level and strategic; it provides direction for integrated, ecosystem-based and adaptive management of marine activities and resources in the PNCIMA planning area. Components of the PNCIMA plan have informed the MaPP initiative. In turn, some of the MaPP outputs, such as recommendations for cumulative effects and protection management, may inform implementation of the PNCIMA plan.

First Nations Marine Planning

Prior to the work being conducted on the Pacific Coast through MaPP and PNCIMA, marine planning was undertaken by First Nations on the North Coast. Members and partners of the North Coast–Skeena First Nations Stewardship Society began community-based marine planning in 2006 in the North Coast plan area. The Gitga'at, Gitxaala, Haisla, Kitselas, Kitsumkalum, and Metlakatla First Nations have each completed and approved community-level strategic marine use plans. These plans provide strategic direction regarding the management, use and protection of each Nation's territories. The plans are comprehensive documents that cover such issues as jurisdiction, resource management, economic development and capacity, and reflect the specific values and priorities of each Nation.

In order to coordinate and integrate community-level planning priorities identified in the First Nations strategic marine use plans, the Gitga'at, Gitxaala, Haisla, Kitselas, Kitsumkalum, and Metlakatla First Nations have collaborated on sub-regional (North Coast) level planning, facilitated by the North Coast–Skeena First Nations Stewardship Society. First Nations marine planning at the sub-regional level reflects priority issues that participating First Nations on the North Coast have in common and identifies how the Nations will work together to address those issues.

First Nations' Community Marine Use Plans have informed the development of the MaPP North Coast Marine Plan and include Best Management Practices and Spatial Plans and Zoning. The spatial planning and zoning in the North Coast MaPP Marine Plan is consistent with the management zones and directions set out in First Nations' Community Marine Use Plans.

Provincial Strategic Land and Marine Planning

The Province of British Columbia initiated provincial strategic land and coastal planning in response to an increasing number of resource management conflicts. The Land and Resource Management Plan (LRMP) processes began in the North Coast region in 2001, and resulted in consensus recommendations being presented to the Province and First Nations governments in 2005. Based on the LRMP recommendations and subsequent discussions between the Province and First Nations, the *Coast Land Use Decision* was announced in 2006. It focused on commitments for implementing EBM, land use zoning and collaborative governance. Though planning is primarily terrestrial based, the *Coast Land Use Decision* has led to the establishment of marine conservancies in the North Coast plan area. The MaPP initiative links with the North Coast LRMP process by expanding EBM into the marine environment.

CHAPTER 3: OVERARCHING THEMES

Photo by Jessica Hawryshyn

Overarching themes for the North Coast plan area were identified by the joint North Coast technical team based on provincial and First Nations priority interests. These topics were refined and scoped with input from stakeholders, advisory bodies and regional MaPP guidance.

Topics are not listed in priority sequence and, within each topic, objectives and strategies are not listed in order of priority. Topics covered in this section are:

3.1 Ecosystem-Based Management

3.2 Governance

3.3 Cumulative Effects Assessment

3.4 Climate Change Adaptation and Mitigation

The objectives and strategies provide general management direction for the North Coast plan area within the scope and jurisdiction described in Section 1.5. Specific objectives and strategies will be implemented on a priority basis according to available resources (see Chapter 6). Examples are provided for some strategies where clarification is helpful. The examples are intended to assist with implementation of the marine plan, although not all examples are expected to be implemented.

The general management direction provided by the objectives and strategies is one component of the North Coast Marine Plan. Additional direction is provided through spatial designations and zoning (Chapter 5).

3.1 Ecosystem-Based Management

Marine ecosystem-based management (EBM) is widely considered to be a crucial approach for effective resource management of coastal and marine ecosystems. EBM differs from sector-based resource management in that it defines management strategies for entire systems, not individual components of the system, with humans as an explicit part of the marine ecosystem.

For the purposes of this plan, EBM is defined as an adaptive approach to managing human activities that seeks to ensure the coexistence of healthy, fully functioning ecosystems and human communities. The intent is to maintain the spatial and temporal characteristics of ecosystems such that component species and ecological processes can be sustained and human wellbeing can be supported and improved.

There are three equally important elements of the MaPP marine EBM framework:

- Ecological integrity—describes ecosystem connectivity as well as habitat and species diversity and is focused on ecosystem structure, function and resilience.
- Human wellbeing—is the combination of social, economic and cultural aspects of human communities, including spiritual and cultural connections to the marine environment.
- Governance (and collaborative management)—focuses on collaborative, effective, transparent and integrated governance and management, as well as public engagement.

The MaPP initiative uses science and Aboriginal ecological knowledge to advance EBM for healthy ecosystems, sustainable uses and delivery of ecosystem services to human communities in the MaPP study area and the North Pacific Coast region of BC. The MaPP initiative uses an established and peer-reviewed marine EBM framework to address a set of issues and challenges identified by First Nations, the provincial government and stakeholders.

First Nations on the North Coast support the use of an EBM framework in MaPP because it supports the holistic and integrated approach to resource management that the Nations in the region have practiced for millennia. Indigenous resource management practices, habitat and stock enhancement measures, and integrated resource use systems maintained both human wellbeing and ecosystem health. First Nations view EBM as a mechanism for returning to a balanced approach to resource use and protection.

Management direction for EBM is incorporated into the general management direction of the objective and strategies presented in this chapter and Chapter 4 of this plan.

3.2 Governance

In the context of this plan, governance includes the regulatory and management authorities, activities and decision-making processes associated with marine areas, resources, uses and activities. The structures, agreements and frameworks under which the MaPP partners engage with each other are within the scope of governance.

Provincial and federal governments have roles and responsibilities in the management of marine space, which require harmonised effort. First Nations manage resources in their territories through both their hereditary systems of governance and their fisheries and resource stewardship programs. First Nations in the North Coast plan area have established laws and governance systems and have not ceded Aboriginal title and rights over lands and marine resources in their territories. The Nisga'a Treaty contains governance and management provisions with respect to fisheries and other marine resources.

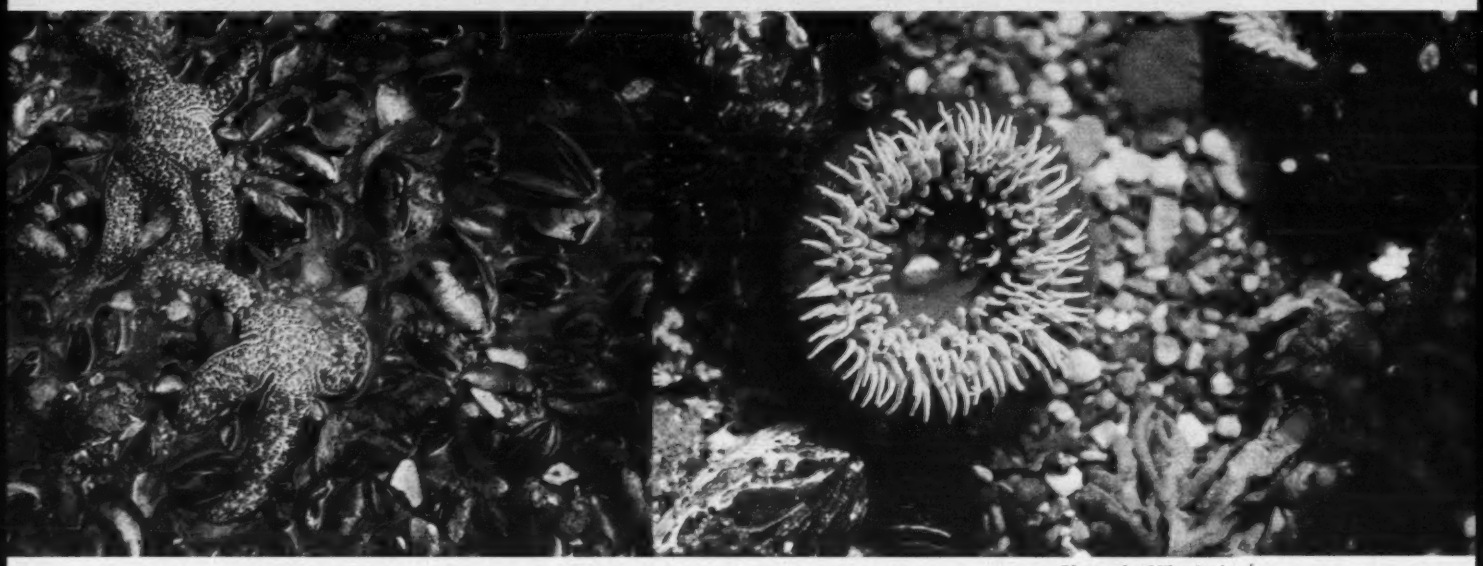
First Nations in the North Coast plan area have signed a number of agreements that strengthen government-to-government relationships and include provisions on natural resource planning and management. The Province and three First Nations from the North Coast (Metlakatla, Gitga'at, Haisla) are signatory to the *Coastal First Nations Reconciliation Protocol*, a North/Central Coast agreement that provides a framework for government-to-government land and resource decision-making.

Consistent with existing agreements, management direction for governance in the North Coast plan area (Table 1) provides recommendations for relationship building, improved governance arrangements in the management of marine resources, and improved consultation processes.

Photo by Jo Smith

Table 1. Governance—management objectives and strategies

Governance	
Obj. 1.	**Strengthen existing or create new relationships to facilitate collaborative ocean governance.**
	Strategy 1.1. Jointly review, and where necessary improve existing provincial policy regarding tenure proponents' engagement with First Nations to develop consistent consultation and collaboration.
	Examples and/or potential actions – Development of consistent wording within Land Act *policy with respect to proponents' due diligence in engagement with First Nations.*
	Strategy 1.2. Identify gaps in the existing Reconciliation Protocol Agreement in relation to marine components of provincial legislation and policy.
	Examples and/or potential actions – Components of the provincial Fisheries Act *regarding harvesting of aquatic plants and fish processing facilities.*
	Strategy 1.3. Explore mechanisms for ensuring meaningful engagement of First Nations in decision-making beyond or in place of Reconciliation Protocols.
	Examples and/or potential actions – Establishment of a process to assess and implement collaborative decision-making mechanisms, particularly with First Nations who are not signatories to existing Reconciliation Protocols.
	Strategy 1.4. Explore mechanisms for expanding the role of First Nations in the tenuring decision-making process.
	Strategy 1.5. Consistent with government to government agreements, develop First Nations opportunity for direct representation in ongoing governance structure, advisory body, or management processes.
	Examples and/or potential actions – Structures or bodies include a representative from each First Nation.
	Strategy 1.6. Support efforts to expand the role of First Nations in monitoring and enforcement activities.
	Examples and/or potential actions – Coordinated patrols, enhanced training and establishment of a regional monitoring network.



Photos by Mike Ambach

Governance	
Obj. 2.	**Develop governance structures to implement marine plans.**
	Strategy 2.1. Assess needs and identify resources required to ensure enduring governance structures are established and maintained to support implementation of the North Coast marine plan. *Examples and/or potential actions – An implementation body to oversee the implementation and development of other governance and management structures.*
	Strategy 2.2. Identify mechanisms to ensure direct government-to-government engagement between the Province and each First Nation on strategic marine plan review. *Examples and/or potential actions – When First Nations strategic marine plans are available, ensure they are reviewed by relevant provincial agencies.*
	Strategy 2.3. Support the development of enduring, inclusive governance arrangements for designing and implementing a marine protected area network. *Examples and/or potential actions – With First Nations and relevant agency involvement, develop agreements that identify rights, responsibilities and accountabilities of the governance bodies.*
	Strategy 2.4. Establish governance arrangements for creating and implementing marine protected area management plans that include First Nations and other appropriate government agencies. *Examples and/or potential actions – Implementation requires Nation-level government-to-government interaction.*
	Strategy 2.5. Establish an inclusive governance arrangement for creating and implementing a marine protected area network management plan. *Example and/or potential actions– Involve marine user groups and the academic community in management planning.*
	Strategy 2.6. Establish a collaborative stakeholder advisory process that supports successful implementation of the North Coast marine plan.
	Strategy 2.7. Improve communication with, and engagement of, stakeholders, local government and industry groups through participation in sector-specific advisory processes. *Examples and/or potential actions – Communication and promotion of plan outcomes to industry-specific groups.*
	Strategy 2.8. Create adaptive management protocols that ensure that new marine resource and use information is integrated into policies, programs, and monitoring and enforcement practices. *Examples and/or potential actions – Policy framework to facilitate the incorporation of data into management, programs and decision-making processes. Establish thresholds.*
	Strategy 2.9. Establish MaPP research advisory panel to facilitate research partnerships and coordination for the North Coast plan area.
	Strategy 2.10. Establish and support a First Nations Technical Marine Planning and Resource Management Table. *Examples and/or potential actions – Coordinate research and management of cumulative effects.*

Governance	
Obj. 3.	**Improve consultation processes regarding marine territories.**
	Strategy 3.1. Support and facilitate the development of First Nations consultation policies.
	Examples and/or potential actions – Nation-based policies outlining consultation requirements for projects in their territories.
	Strategy 3.2. Improve consistency between First Nations consultation policies and provincial consultation policies.
	Examples and/or potential actions – Update provincial policy, where possible, referencing First Nations consultation policies.
	Strategy 3.3. Review, and where appropriate, communicate the existence of First Nations strategic marine use plans to governments, proponents and other user groups to improve consultation and engagement.
	Strategy 3.4. Facilitate the development of First Nations protocols with proponents regarding development and tenures, including best practices, economic benefits and accountability.
	Examples and/or potential actions – Nation-level protocols and consistent provincial policy that incorporates relationship building and/or protocol agreements for all tenured activities.
	Strategy 3.5. Develop First Nations capacity for enhanced engagement in the provincial environmental assessment and tenure referrals processes to facilitate collaborative resource management.
	Examples and/or potential actions – Assess First Nations capacity and identify funding and other mechanisms to enhance it where needed.

3.3 Cumulative Effects Assessment

Cumulative effects are changes to environmental, social and economic values that are caused by the combined effects of past, present and reasonably foreseeable actions or events. A cumulative effects assessment evaluates the extent to which individual actions or events (including climate change) create stress on valued components of socioeconomic and/or biophysical systems. Cumulative effects assessments are important because the incremental and combined effects of individual actions or events may be significant, even though the effects of each action, when independently assessed, are considered to be insignificant.

A MaPP Cumulative Effects Assessment Framework is being developed for the MaPP study area and will be finalised during the implementation phase of the MaPP initiative. The MaPP Cumulative Effects Assessment Framework will align with the provincial Cumulative Effects Assessment Framework and will result in a compatible approach to assessing cumulative effects of both terrestrial and marine uses and activities in the MaPP study area. The MaPP Cumulative Effects Assessment Framework is also being informed by the federal cumulative effects assessment framework and the Canadian Environmental Assessment Agency's *Cumulative Effects Practitioners Guide.* Cumulative effects have been identified as a priority issue by First Nations on the North Coast, who are seeking ways to improve upon the current methods of assessment.

Management direction for cumulative effects assessment in the North Coast plan area (Table 2) aims to collaboratively limit and manage for the cumulative effects of industrial and non-industrial development. This requires improved information, including the evaluation of existing information and baseline studies to support cumulative effects assessment. Additional direction is provided regarding the identification of potential impacts and thresholds and the need for collaborative monitoring of cumulative effects.

Table 2. Cumulative effects assessment—management objectives and strategies

Cumulative Effects Assessment	
Obj. 1.	**Strengthen existing or create new relationships to facilitate a Cumulative Effects Assessment.**
	Strategy 1.1. Develop governance arrangements for implementing the MaPP cumulative effects framework.
	Examples and/or potential actions – With First Nations and relevant agency involvement, develop agreements that identify responsibilities and accountabilities of the governance bodies.
	Strategy 1.2. Establish a sub-regional advisory committee.
	Examples and/or potential actions – Engagement of local experts and knowledge-holders in identifying issues and thresholds. Use the advisory body to review and provide guidance to cumulative effects evaluation in key areas of the North Coast.
	Strategy 1.3. Establish partnerships with education institutions, non-government organizations, and industry to facilitate cumulative effects research.
	Examples and/or potential actions – Coordinate work of First Nations, government agencies and non-government agencies to ensure a consistent approach to cumulative effects research and monitoring.
	Strategy 1.4. Establish and support a First Nations Technical Marine Planning and Resource Management Table.
Obj. 2.	**Determine core coastal and marine values.**
	Strategy 2.1. Commission a thorough literature review and gap analysis to compile all existing socioeconomic and ecological data that are relevant to cumulative effects assessment.
	Examples and/or potential actions – Prioritise based on currently proposed activities and immediate versus future needs.
	Strategy 2.2. Collaboratively identify types, scope and scale of studies, including geographic and temporal frames.
	Examples and/or potential actions – Work with community members and others with local expertise.
	Strategy 2.3. Contract First Nations and local stewardship groups to design and conduct baseline studies to fill data gaps.
	Examples and/or potential actions – Create a list of local stewardship programs and baseline studies, and highlight the stewardship role that First Nations can play in their territories. This may include assistance to First Nations and local communities in accessing funding for stewardship programs.
	Strategy 2.4. Identify mechanisms to initiate further studies as new projects and types of impacts are integrated into the cumulative effects framework.
	Examples and/or potential actions – Mechanisms to guide further studies may include thresholds or triggers.

Cumulative Effects Assessment	
Obj. 3.	**Collaboratively identify management objectives for ecological, social and cultural values.**
	Strategy 3.1. Commission an expert report on potential effects of proposed development(s) on ecological, social and cultural values.
	Strategy 3.2. Collaboratively identify impact limits and development thresholds, and determine appropriate management actions.
	Examples and/or potential actions – Involve local expertise and community members.
	Strategy 3.3. Identify mechanisms for enforcing limits and thresholds through legislative reform, requirements for proponents or tenure holders, or other methods.
	Examples and/or potential actions – Automatic rejection of new applications.
Obj. 4.	**Utilise results of a Cumulative Effects Assessment to support decision making.**
	Strategy 4.1. Collaboratively develop strategies to mitigate negative impacts on core coastal and marine values.
	Strategy 4.2. Identify mechanisms for effective implementation of mitigation strategies.
	Examples and/or potential actions – Legislative reform, legal objectives, tenure requirements, or industry Best Management Practices. Spatial planning at finer scales.
	Strategy 4.3. Contract First Nations and non-governmental organizations to design and implement a cumulative effects monitoring program.
	Examples and/or potential actions – Create a list of local monitoring programs. May include assistance to First Nations and local communities in accessing funding for design and implementation of programs.
	Strategy 4.4. Identify mechanisms to ensure that monitoring data are integrated into resource management decision-making.
	Examples and/or potential actions – Improve efficiency of governance structures to receive and act on information. Determine and document monitoring data required by appropriate resource management decision-making agencies.
	Strategy 4.5. Work with relevant governments and agencies to establish collaborative governance arrangements for monitoring cumulative effects and guiding methodologies and management actions.
	Examples and/or potential actions – Collaborative design of monitoring protocols. Identification of appropriate mitigation actions in response to negative impacts on core coastal and marine values.

3.4 Climate Change Adaptation and Mitigation

A strong, credible body of scientific evidence shows that climate change, caused largely by human activities, is occurring and that it presents significant risks for a broad range of human and natural systems. The marine environment will be impacted by climate change with repercussions for marine species and the communities that depend on them. Climate change impacts on the North Coast marine environment are likely to include increases in sea level and ocean temperatures; changes in ocean circulation patterns, water chemistry (pH, dissolved oxygen) and precipitation patterns; and increases in the frequency and severity of storm events. This could lead to changes in habitats and species abundance and/or distribution, which could impact food security and commercial harvests. Projections of impacts are imprecise; therefore, it is important to anticipate vulnerabilities and prepare for a range of changes while incorporating provisions for unknowns.

Ocean ecosystems play an important role in mitigating climate change by capturing and storing heat and carbon from the atmosphere. The United Nations Environment Programme's Blue Carbon Initiative focuses on developing policies and tools to ensure the ability of coastal and marine ecosystems to maintain their carbon sequestration and storage functions and to avoid emissions of greenhouse gases. Blue carbon habitats such as seagrass and seaweed beds provide a wide range of ecosystem services, and by protecting them for the purpose of carbon sequestration we can also maintain the services they provide to local communities. These services include protection against storm surges and sea-level rise, revenue from tourism, and food security.

Management direction for climate change adaptation and mitigation (Table 3) includes addressing the potential increasing threat to ecosystems, communities and infrastructure from climate change, increasing monitoring efforts, and completing assessments of vulnerable areas. Direction is also provided to identify ways to reduce greenhouse gas emissions and support community resilience to climate change impacts.

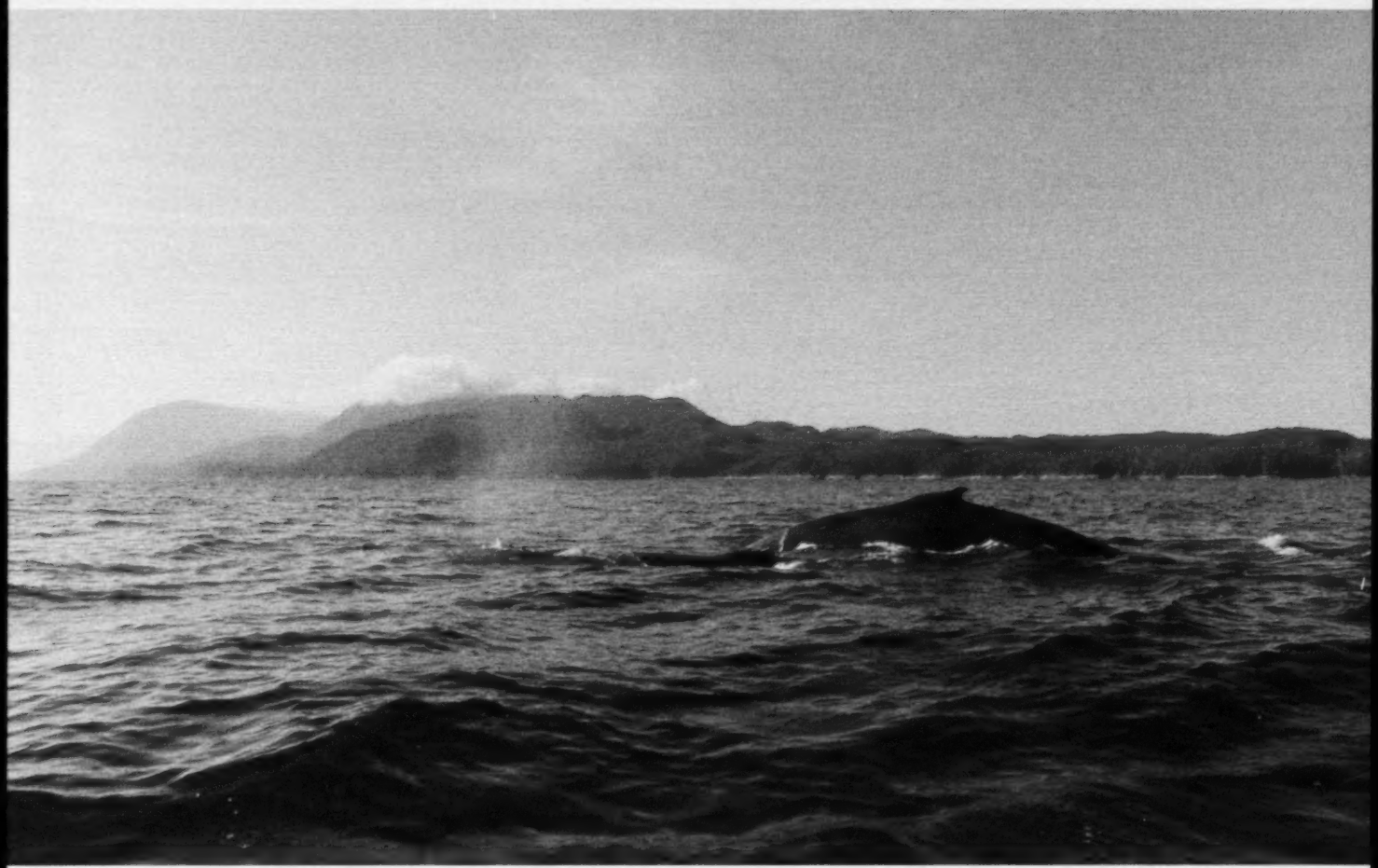


Photo by Erin Mutrie

Table 3. Climate change adaption and mitigation—management objectives and strategies

Climate Change Adaption and Mitigation	
Obj. 1.	**Prepare and manage for ecological changes due to climate change.**
	Strategy 1.1. Conduct a climate change vulnerability assessment for North Coast marine ecosystems.
	Examples and/or potential actions – Identify key ecosystem functions and services that are specific to or prioritised in the North Coast plan area and focus research efforts on species that are more resistant and resilient to climate change impacts.
	Strategy 1.2. Consider the impacts of climate change in the design of a marine protected area (MPA) network and the opportunities that marine protected areas offer to mitigate and adapt to climate change.
	Examples and/or potential actions – Prioritize protection of sites that have high carbon sequestration, adaptation and resiliency values including sites that may serve as climate refugia.
	Strategy 1.3. Promote opportunities for ongoing monitoring of potential ecosystem changes due to climate change by developing a monitoring protocol for regional and community bodies.
	Examples and/or potential actions – Identify existing monitoring efforts for identified climate change indicators. Communicate the monitoring requirements for implementation of MaPP to existing monitoring bodies and agencies.
	Strategy 1.4. Incorporate climate change into the selection of ecosystem indicators.
	Examples and/or potential actions – High carbon sequestration, adaptation and resiliency.
	Strategy 1.5. Identify and implement measures and actions to increase the resilience and reduce the vulnerability of marine ecosystems to climate change.
	Examples and/or potential actions – Fund the rehabilitation of coastal and marine habitats to enhance their capacity for carbon storage and sequestration.
	Strategy 1.6. Establish partnerships with research institutions and industry to ensure coordinated research on climate change in the North Coast plan area.
	Strategy 1.7. Identify and map carbon sinks and protect and restore them.
	Examples and/or potential actions – Include a range of shoreline and estuary protection and restoration activities designed to meet domestic and international quality standards for Blue Carbon Initiatives.

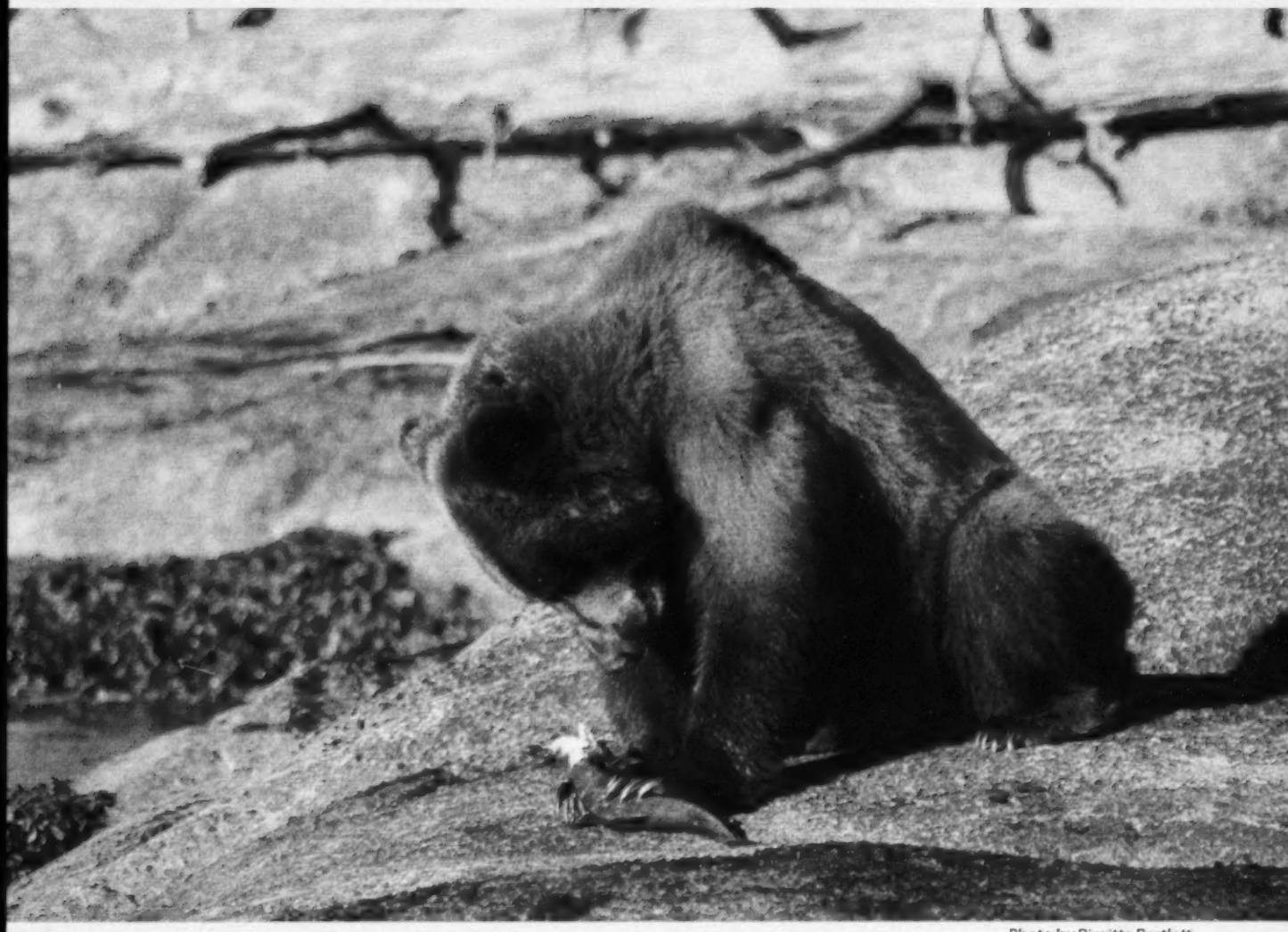


Photo by Birgitte Bartlett

Climate Change Adaption and Mitigation	
Obj. 2.	**Reduce community vulnerability to climate change impacts and support community resilience.**
	Strategy 2.1. Identify and prioritise climate-related risks that communities are predicted to face or are already experiencing.
	Examples and/or potential actions – Sponsor a community-based report of climate-related risks. Allocate resources to mitigate risks based on assessments of highest consequence and/or probability to occur. Assess particular vulnerabilities of First Nations and outlying communities.
	Strategy 2.2. Communicate the potential impacts of climate change through community outreach and public education, and include general household-level preparedness for emergencies.
	Examples and/or potential actions – Food and water supplies, power outages, fuel, and heating and lighting sources.
	Strategy 2.3. Support the review and/or development of community emergency response plans for marine-based climate change events.
	Examples and/or potential actions – Flooding, storm surge and severe storm events.

Climate Change Adaption and Mitigation	
Obj.3.	**Work collaboratively to monitor and adapt to changes in fisheries and aquaculture systems due to climate change.**
	Strategy 3.1. Consider climate change effects on locally important fisheries, particularly when selecting indicators and developing adaptive management plans.
	Examples and/or potential actions – Includes local participation and employment related to fisheries.
	Strategy 3.2. Explore collaborative efforts to identify, research and evaluate potential new fisheries or opportunities due to climate change.
	Examples and/or potential actions – Partnerships with academia, industry and others.
	Strategy 3.3. Consider the effect of climate change on new and existing aquaculture operations, particularly when developing adaptive management plans and tenuring decisions.
	Examples and/or potential actions – Rationale for adaptive management plans and tenuring decisions should identify climate change considerations and/or management strategies.
	Strategy 3.4. Assess habitat vulnerability for key marine species when developing mitigation strategies.
Obj.4.	**Prepare and manage for cultural, social and economic impacts due to climate change.**
	Strategy 4.1. Provide support for North Coast First Nations to oversee a climate change risk assessment and develop a mitigation plan.
	Examples and/or potential actions – Provide funding to identify climate sensitive components of marine ecosystems that are important for First Nations food networks and food security, and identify mitigation measures.
	Strategy 4.2. Inventory archaeological and heritage sites that are vulnerable to climate change impacts and develop a plan for resilience and mitigation.
	Examples and/or potential actions – Site-specific management plans.
	Strategy 4.3. Identify marine infrastructure that is vulnerable to climate change impacts and prioritise sites for mitigation.
	Examples and/or potential actions – Prioritise and mitigate affected infrastructure using climate-smart restoration and mitigation techniques. Include economic cost-benefit risk analysis in order to prioritise mitigation.

CHAPTER 4: GENERAL MANAGEMENT DIRECTION

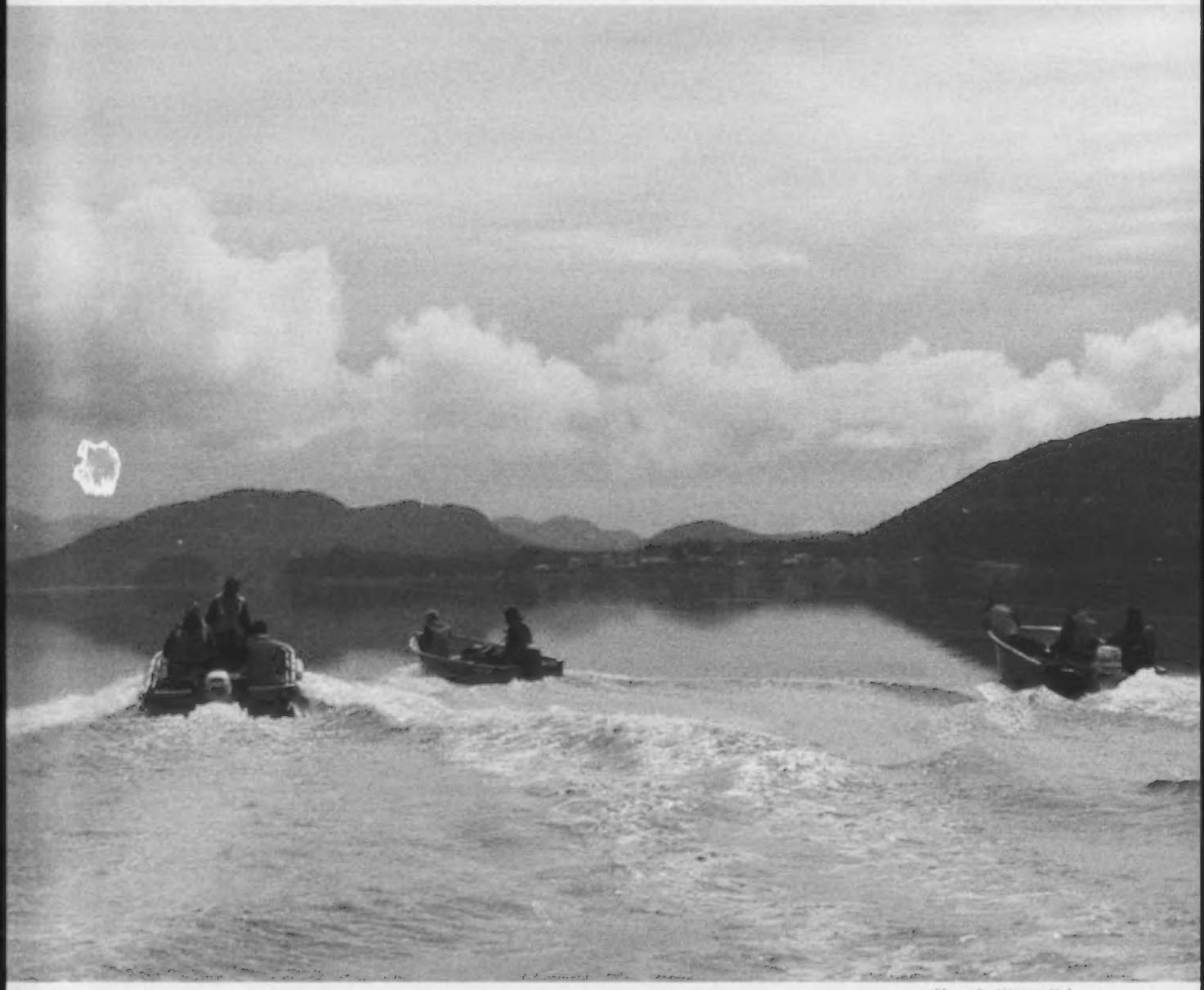


Photo by Warren Nelson

Areas of focus for general management direction for the North Coast plan area were identified by the joint North Coast technical team based on provincial and First Nations priorities for implementing EBM. Topic areas were also informed by First Nations strategic marine plans and provincial plans, policies and mandates, and were later refined with input from stakeholders, advisory bodies and regional MaPP guidance. They are not listed in priority sequence, and objectives and strategies are not listed in order of priority.

Topics covered in this section are:

4.1 Compliance and Enforcement

4.2 Monitoring, Reporting and Adaptive Management

4.3 Marine Protection

4.4 Marine Pollution

4.5 Marine Response

4.6 Tenured Activities: Land Policies and Procedures

4.7 Tenured Activities: Renewable Energy

4.8 Tenured Activities: Shellfish and Marine Plant Aquaculture

4.9 Tenured Activities: Marine-based Forestry Operations

4.10 Tourism and Recreation

4.11 Marine Fisheries Economy

4.12 Economic Well-Being

4.13 Heritage Sites and First Nations Cultural Areas

4.14 First Nations Resource Use and Management

The objectives and strategies provide general management direction for the North Coast plan area within the scope and jurisdiction described in Section 1.5. Specific objectives and strategies will be implemented on a priority basis according to available resources (see Chapter 6). Examples are provided for some strategies where clarification is required. The examples are intended to assist with implementation of the marine plan, though not all examples are expected to be implemented.

The general management direction provided by the objectives and strategies is one component of the North Coast Marine Plan. Additional direction is provided through spatial designations and zoning (Chapter 5).

4.1 Compliance and Enforcement

In BC, a suite of federal and provincial regulatory requirements are administered to protect human health, the environment, and public safety. First Nations laws govern the development, conservation, and use of territories on the North Coast and reserve lands are subject to particular regulations governed by band councils. The Nisga'a Treaty contains various governance and management provisions concerning environmental protection and public safety. Laws and regulations are only effective if they are complied with, and for this reason compliance monitoring is an important part of overall environmental stewardship.

Federal and provincial Ministers are responsible for implementing legislation, and Ministers designate enforcement officers to ensure compliance with regulations set forth in legislation. For example, conservation officers, parks officers, fishery officers, and members of the RCMP are empowered to enforce the law. First Nations are seeking broader recognition of their indigenous laws and hereditary governance systems, which protect and sustain their resources and territories. Currently, reserve lands and community practices are the responsibility of elected band councils.

Compliance and enforcement programs are implemented by governments, but collaborative partnerships with industry and the public are key to success. A successful enforcement program will ensure that regulated individuals, companies, and government agencies act in a way that achieves the objectives of environmental and public safety regulations.

Compliance and enforcement involves inspections, investigations of violations, enforcement actions to compel compliance (e.g., warnings, tickets, compliance orders), and possibly court action (e.g., injunctions, prosecution, etc.). Compliance and enforcement programs can be challenging to implement effectively in large, remote areas like the North Coast, where costs of surveillance are high and budgets for compliance monitoring may not be in keeping with demand. Compliance and enforcement programs are also limited by inadequate training for enforcement officers, lack of adequate laboratory testing to verify compliance, and/or poor follow up to verify that violators returned to compliance. Promoting compliance involves encouraging conformity with the law through information and education programs to increase awareness and understanding of the law and its regulations.

Greater on-the-water presence is important for increasing awareness of, and adherence to, applicable legislation. In many areas of the North Coast, First Nations monitors or guardians are most likely to be in the area when and where activities occur, but the Nations currently lack the necessary resources for comprehensive monitoring and do not have the legal mandate to enforce activities off reserve lands. A greater role for First Nations in compliance and enforcement will support long-term conservation of marine and cultural values and is increasingly important given the intensive development pressure in the North Coast plan area. First Nations seek recognition of their enforcement authority as part of their Aboriginal rights and title, including the acknowledgment of First Nations laws within their territories.

Management direction for compliance and enforcement in the North Coast plan area (Table 4) includes enhanced capacity for enforcement programs, improved communication and collaboration, and partnerships and agreements that will enable greater First Nations involvement.

Table 4. Compliance and enforcement—management objectives and strategies

Compliance and Enforcement	
Obj. 1.	**Enhance capacity for surveillance, compliance and enforcement.**
	Strategy 1.1. Coordinate and standardise data collection by developing templates and databases.
	Examples and/or potential actions – Assess and prioritise data collection needs and processes, and identify potential for collaboration. Explore mechanisms for standardising and coordinating data collection.
	Strategy 1.2. Establish a communications strategy that ensures the effective flow of information and timely action on enforcement issues.
	Strategy 1.3. Develop a database component that facilitates information sharing in order to support enforcement and safety measures between monitoring programs and partners.
	Examples and potential actions - Information sharing between monitoring partners regarding observations of activities.
	Strategy 1.4. Develop a monitoring and assessment needs report for current and future requirements, including resources, across all agencies.
	Examples and/or potential actions – Incorporate increasing enforcement requirements resulting from industrial development.
	Strategy 1.5. Ensure secure, long-term funding and capacity exists among partners for appropriate levels of enforcement, with particular attention to enforcement within Marine Protected Areas.
	Examples and/or potential actions – Establish funding arrangements to ensure appropriate levels of enforcement capacity.
	Strategy 1.6. Enhance capacity of First Nations surveillance and enforcement programs.
	Examples and/or potential actions – Acquire funding for more staff, equipment and training opportunities.
	Strategy 1.7. Develop and/or expand First Nations training programs and opportunities, including apprenticeship with other agencies.

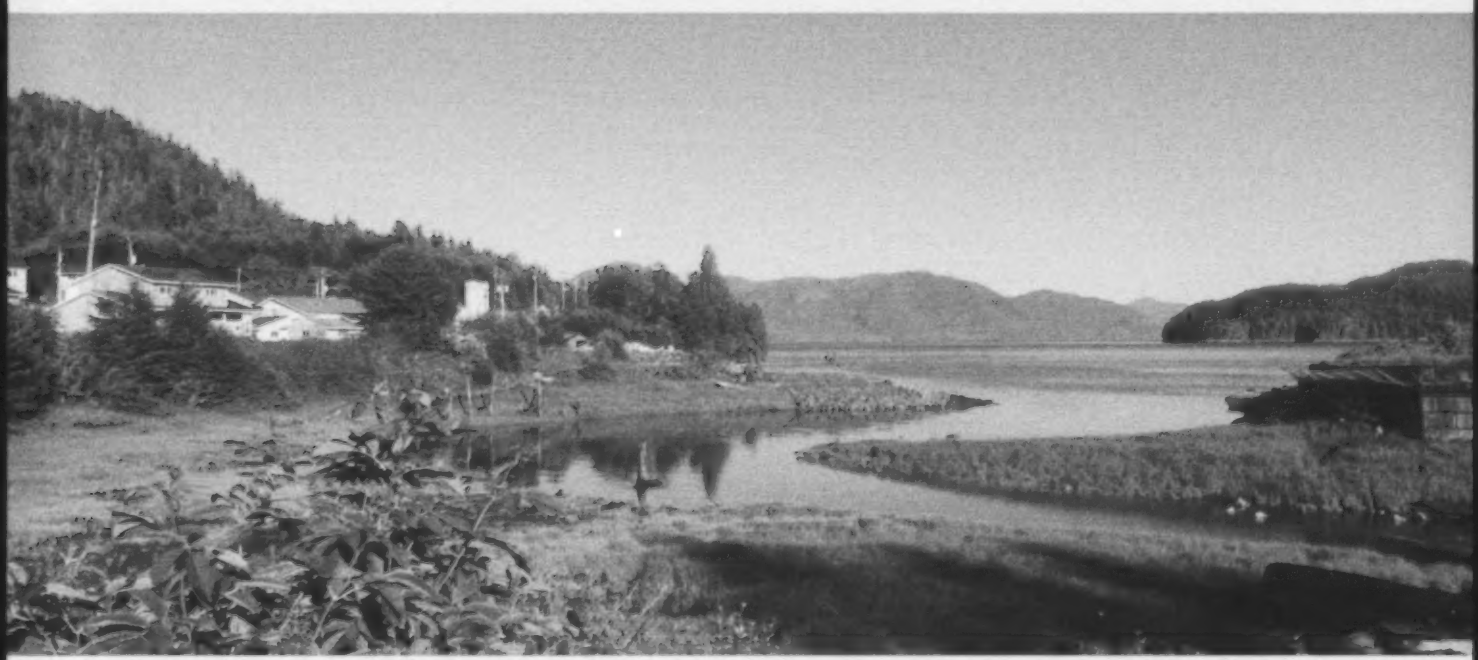


Photo by Erin Mutrie

Compliance and Enforcement	
Obj. 2.	**Strengthen marine-based compliance and enforcement by expanding collaborative relationships.**
	Strategy 2.1. Improve understanding among enforcement agencies of policies, programs and personnel.
	Strategy 2.2. Clarify compliance and enforcement authority and responsibilities between applicable provincial agencies and First Nations.
	Strategy 2.3. Jointly review and, where appropriate, establish formal agreements between First Nations and applicable provincial agencies that greater enable First Nations involvement in compliance and enforcement activities.
	Examples and/or potential actions – Collaborative patrol schedules to facilitate coverage of areas for compliance with provincial policy and legislation; e.g., Land Act *under Ministry of Forests, Lands and Natural Resource Operations,* Fish Protection Act *under Ministry of Environment.*
	Strategy 2.4. Coordinate training for enforcement programs with other relevant enforcement agencies in order to develop a collaborative approach to compliance and enforcement monitoring.
	Examples and/or potential actions – Assess and prioritise training needs and identify the potential for collaboration.
	Strategy 2.5. Establish minimum seasonal patrol days for parks and protected areas and provincially tenured activities.
	Examples and potential actions - Use a needs assessment to determine patrol days.
	Strategy 2.6. Establish partnerships with BC Parks to ensure adequate patrols of existing and future provincial parks and conservancies.
	Examples and/or potential actions – Explore funding opportunities/sources to maintain adequate patrols with BC Parks.
	Strategy 2.7. Prioritise sensitive areas and anchorages for enhanced surveillance and enforcement.
	Examples and/or potential actions – Complete anchorage use profiles and site sensitivity assessments.
	Strategy 2.8. Explore opportunities for First Nations participation and collaboration in the design of monitoring and enforcement programs for industrial developments and operations.
Obj. 3.	**Improve awareness of, and adherence to, regulations among marine user groups.**
	Strategy 3.1. Work with compliance and enforcement agencies to improve marine users' and the general public's understanding of all applicable marine legislation, zoning designations, or permit/ licensing requirements and First Nations rights.
	Strategy 3.2. Develop communications materials that inform marine users and the general public about Aboriginal rights and title, and indigenous laws and resource management practices as they pertain to marine areas and activities.
	Examples and/or potential actions – First Nations harvesting, First Nations monitoring and enforcement, and protection of cultural sites.
	Strategy 3.3. Communicate the roles and responsibilities of First Nations monitoring, research and enforcement programs to industry, the general public, and other marine user groups.
	Examples and/or potential actions – Pamphlets, internet, social media and other communications materials.
	Strategy 3.4. Collaborate with First Nations and provincial agencies to develop incentives for compliance with legislation.
	Strategy 3.5. Investigate the potential development of a citizen reporting program for cultural heritage disturbances and other violations.
	Examples and/or potential actions – A phone-in hotline or online reporting system.

4.2 Monitoring, Reporting and Adaptive Management

Long-term environmental monitoring, evaluation and reporting are fundamental to understanding and documenting environmental changes, and assessing the effectiveness of management actions. Monitoring can assist with the identification of new environmental concerns, the prioritization of issues, and the evaluation of trends over time. Resource management should be considered a continuous and iterative process, and monitoring can provide the information and evidence needed to determine what is working and what is not, so that policies and management actions can be adapted if monitoring results show it is necessary.

A number of monitoring programs are currently conducted by federal agencies, provincial and local governments, First Nations, research institutions and academia, nongovernmental organizations, and individual volunteers. For example, First Nations monitoring programs have local staff that monitors areas of their territory and specific cultural resources. Ecological and cultural features of importance are closely monitored, and the impacts of marine uses and activities on these features are assessed.

Monitoring programs vary in many respects, including sampling design and intensity, parameters tested, analytical methodology, data management protocols, and funding. Designing and executing a systematic monitoring program requires dedicated staff time, skilled personnel, equipment and supplies. Because of the costs involved, existing monitoring efforts should be closely coordinated, where possible, and standardization of data collection and analysis increases its utility for management.

The large area of the North Coast creates challenges for monitoring, data collection and effective stewardship of the plan area. A lack of baseline information makes it difficult to evaluate long-term changes in bio-physical conditions. There is much unknown about the status of coastal environments, and increased monitoring will be required to make informed management decisions. Baseline surveys upon which monitoring is based are important, and should be the focus of some attention. In addition, improved and coordinated data collection across monitoring programs is needed to facilitate the assessment of cumulative effects.

Management direction for monitoring, reporting and adaptive management in the North Coast plan area (Table 5) includes enhanced opportunities for monitoring of marine activities and areas, coordinated and effective collection of marine data, and efficient use of marine data to inform marine resource management.

Table 5. Monitoring, reporting and adaptive management—management objectives and strategies

Monitoring, Reporting and Adaptive Management	
Obj. 1.	**Strengthen marine-based monitoring and stewardship by enhancing capacity and expanding collaborative relationships.**
	Strategy 1.1. Establish and maintain a collaborative regional monitoring network among provincial and appropriate monitoring agencies and First Nations to increase opportunities for field monitoring of ecosystems and impacts on them. *Examples and/or potential actions – Inventory regional monitoring bodies that are active in the North Coast plan area and identify community-level locations for monitoring sites, including monitoring stations and remote data collection.*

Monitoring, Reporting and Adaptive Management
Strategy 1.2. Encourage the establishment of voluntary monitoring programs by industry and tenure-holders that support or enhance the collaborative regional monitoring network.
Strategy 1.3. Work with relevant agencies to coordinate implementation of, and training for, marine monitoring programs to create a collaborative approach to monitoring. *Examples and/or potential actions – Determine training needs and opportunities.*
Strategy 1.4. Develop a monitoring and assessment needs report for current and future requirements, including resources, across all agencies. *Examples and/or potential actions – Identify priority sites and activities, and undertake an inventory of available resources.*
Strategy 1.5. Secure long-term funding and capacity among network partners for monitoring and stewardship. *Examples and/or potential actions – Establish funding arrangements.*
Strategy 1.6. Increase awareness of the monitoring and research work of First Nations resource management staff. *Examples and/or potential actions – Social and print media.*

Photo by Renny Talbot

Monitoring, Reporting and Adaptive Management	
Obj. 2.	**Support the coordinated and effective collection of marine data by government agencies, First Nations, industry and other marine users.**
	Strategy 2.1. Support the expansion of First Nations stewardship and resource management programs to enhance capacity for field monitoring and data collection.
	Examples and/or potential actions – Identify funding and capacity requirements for field monitoring and data collection.
	Strategy 2.2. Ensure monitoring personnel work collaboratively across existing monitoring programs to assemble data and offer collective recommendations for adaptive management.
	Examples and/or potential actions – Identify mechanisms necessary to share data between monitoring and assessment programs, and where possible, incorporate data into relevant management policies and programs.
	Strategy 2.3. Develop a collaborative data management strategy to facilitate use and analysis of data on ecosystems and human uses.
	Examples and/or potential actions – Involve First Nations and appropriate monitoring and assessment agencies, industry and other research and user groups.
	Strategy 2.4. Support the development of indicators, targets and thresholds that support ecosystem-based management initiatives.
	Strategy 2.5. Build on existing and/or develop data collection templates and programs for key issues and user groups to ensure consistency in data collection and facilitate data integration.
	Examples and/or potential actions – Develop procedures to facilitate data integration.
	Strategy 2.6. Develop voluntary data collection opportunities for the public.
	Examples and/or potential actions – B.C. Cetacean Sightings Network.
	Strategy 2.7. Identify partnerships with educational institutions and industry to facilitate data collection and monitoring.
	Strategy 2.8. Explore opportunities for enhanced data collection in heavily used areas.
	Examples and/or potential actions – Enhance research and monitoring efforts in industrial zones, populated areas, popular anchorages, etc.
Obj. 3.	**Support the analysis and use of monitoring data in order to better manage marine resources and activities.**
	Strategy 3.1. Collaboratively identify data needs and existing data sources to support marine stewardship and monitoring.
	Strategy 3.2. Build a regional database to archive and facilitate analysis and use of marine data sets.
	Examples and/or potential actions – Integrate data into existing databases, where possible, and/or build databases where required.
	Strategy 3.3. Create adaptive management protocols that ensure that new marine resource information is integrated into policies, programs, and monitoring and enforcement practices.
	Examples and/or potential actions – Collaboratively establish thresholds for triggering management action.
	Strategy 3.4. Develop mechanisms for initiating research and management actions based on Aboriginal and local knowledge, observations and concerns.
	Examples and/or potential actions – A process to facilitate reporting of observations and concerns and prioritising research needs.

4.3 Marine Protection

There are various mechanisms used to conserve and / or protect coastal and marine values in BC, including:

- legislation (e.g., Wildlife Act of British Columbia, Environmental Assessment Act, Ecological Reserves Act, Fisheries Act) and policy (e.g., Conservation Framework);
- standards, guidelines, and regulations (e.g., Ballast Water Control and Management Regulations, Riparian Areas Regulation, Tourism Wildlife Guidelines);
- permits and approvals (e.g., Waste Discharge Authorizations, Mineral Exploration Permitting);
- First Nations adaawx and nuyem (traditional laws);
- commitments to voluntary international agreements (e.g., Convention on Biological Diversity 1996);
- economic incentives (e.g., non-compliance fines, pollution levies);
- environmental monitoring and reporting (e.g., Environmental Monitoring System (EMS));
- voluntary instruments (e.g., ISO 14000, industry sponsored best management practices);
- conservation strategies, management plans (e.g., Sponge Reef Conservation Strategy, Integrated Fisheries Management Plans);
- recovery strategies for Species at Risk; and
- investments in restoration of degraded ecosystems.

All are designed to avoid harm or protect/restore features and functions that are vital in the maintenance of ecosystem health and community well-being. Management tools that can be applied spatially, such as marine protected areas (MPAs) designated through legislation, can be particularly effective for providing protection to species and/or habitats and for addressing multiple stressors and threats.

A MPA is defined by the International Union of Conservation and Nature (IUCN) as "a clearly defined geographical space recognized, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values". MPAs are established for a wide range of purposes, including protecting marine biodiversity, restoring fisheries stocks and/or ecosystems, managing tourism activities, providing opportunity for research and education, and protecting cultural or historical features and Aboriginal practices.

The importance of MPAs is well recognized in BC, and governments have formalized commitments to their establishment and management through various agreements and/or frameworks. In 2011, the federal, provincial and territorial governments endorsed the *National Framework for Canada's Network of Marine Protected Areas*, a document that outlines Canada's approach to creating a national network of MPAs through systematic conservation planning. In 2014, the *Canada-British Columbia Marine Protected Area Network Strategy* was released. It provides policy guidance for the design of a network of MPAs in Pacific Canada, and includes a vision and goals to guide regional planning and identifies ecological, social, economic and cultural design principles for the creation of effective, functional networks.

The Government of Canada and Province of British Columbia hold the legal authority to establish MPAs within the MaPP study area. Federal and provincial legislation that provide for the establishment of protected areas is identified in Table 6. First Nations are exploring mechanisms for protecting areas and resources of particular value in their territories, such as Indigenous Peoples' and Local Community Conserved Areas and Territories and other designations.

Table 6. Provincial and federal legislation for protected areas

Provincial Legislation	Federal Legislation
Ecological Reserve Act (ecological reserve)	*Oceans Act (marine protected area)*
Environment and Land Use Act (protected area, conservation study area)	*Canada National Marine Conservation Areas Act (national marine conservation area)*
Protected Areas of British Columbia Act, Park Act (park, recreation area, conservancy, ecological reserve)	*Canada National Parks Act (national park)*
Land Act (land reserve, notation of interest)	*Canada Wildlife Act (marine wildlife area, wildlife area)*
Wildlife Act (wildlife management area)	*Migratory Birds Convention Act (migratory bird sanctuary)*

In the North Coast plan area, the Department of Fisheries and Oceans Canada manages a number of long-term or permanent commercial and/or recreational fisheries closures that are designed to alleviate the decline of specific species and/or to protect habitat from damage. For example, Rockfish Conservation Areas protect rockfish and lingcod from all mortality associated with recreational and commercial fishing, and commercial groundfish and shrimp trawl fishery closures in Hecate Strait/Queen Charlotte Sound protect glass sponge reef complexes from fishing gear damage. Figure 4 shows existing and proposed provincial and federal protected areas in the marine environment within the plan area, as well as Rockfish Conservation Areas managed by the federal government.

Photo by Jessica Hawryshyn

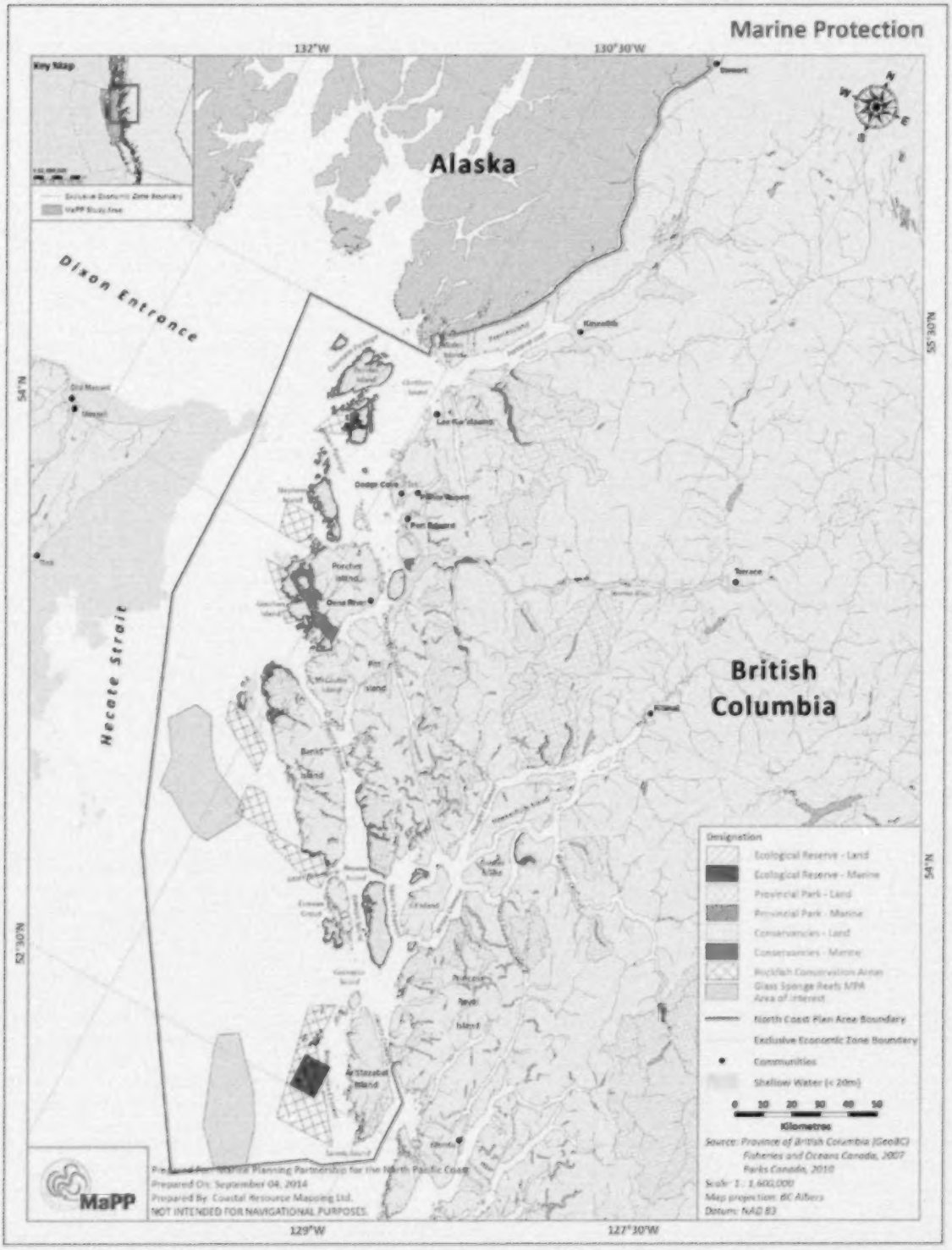


Figure 4. North Coast existing and proposed protected areas and Rockfish Conservation Areas

Management direction for marine protection (Table 7) is intended to complement ongoing efforts to design a marine protected area network in the Northern Shelf Bioregion, as described in Section 2.6. Table 7 also presents objectives and strategies that incorporate some of the non-spatial mechanisms for protection of important ecological, social, economic, and cultural values. Spatial recommendations for Protection Management Zones, as presented in Chapter 5, supplement the general management direction.

Table 7. Marine protection—management objectives and strategies

Marine Protection	
Obj. 1.	**Through the Canada–BC–First Nations Marine Protected Area (MPA) network planning process propose candidate areas for a MPA network.**
	Strategy 1.1. Work with relevant agencies to develop enduring, collaborative governance arrangements to design and implement a MPA network.
	Strategy 1.2. Collaboratively develop and implement an evaluation framework to identify Protection Management Zones that would benefit from permanent, legal protection through MPA designation. *Examples and potential actions - Include a process for identifying the most appropriate tool(s) to achieve conservation objective(s) for PMZ recommendations.*
	Strategy 1.3. Collaboratively identify Protection Management Zones that will be advanced for consideration in the Canada-BC-First Nations MPA Network planning process. *Examples and/or potential actions – Share data and analyses, as appropriate (e.g., Marxan analysis used to identify ecologically important areas).*
	Strategy 1.4. Integrate local and Aboriginal knowledge into MPA planning to improve scientific information and fill data gaps. *Examples and/or potential actions – Create appropriate data-sharing agreements that resolve the sensitive nature of sharing information, including a-spatial stories.*
	Strategy 1.5. Consider data on food security needs and First Nations use when selecting candidate areas for protection and levels of protection. *Examples and/or potential actions – Identify and resolve data gaps on First Nations use and incorporate the information into ongoing planning and site selection.*
Obj. 2.	**Protect important marine values that cannot be protected through a MPA network.**
	Strategy 2.1. Increase monitoring of threats to important ecological components and use results to improve management regimes. *Examples and/or potential actions – Monitor marine pollution, habitat disruption and resource use. Use the ecosystem vulnerability matrix to help identify priorities for enhanced monitoring.*
	Strategy 2.2. Work with relevant agencies to support current efforts to protect marine species at risk. *Examples and/or potential actions – Illegal sale of abalone.*
	Strategy 2.3. Work with relevant agencies to determine the carrying capacity of tenured commercial recreational fishing activity for use in tenure management decisions. *Examples and/or potential actions – Involve multiple agencies in a comprehensive carrying capacity study involving ecological, social and economic components.*
	Strategy 2.4. Support ongoing efforts to identify and mitigate the impacts of marine invasive species.

Marine Protection	
Obj. 3.	**Protect and/or restore habitat for species that are highly valued for their ecological and cultural significance.**
	Strategy 3.1. Support and facilitate ongoing efforts to identify, map, assess and restore quality of habitats in the North Coast plan area. *Examples and/or potential actions – Inventory current efforts to restore and enhance significant habitat (e.g., kelp forests, rocky intertidal zones, clam- and cockle-bearing beaches, estuarine habitat, salmon-bearing streams and salmon spawning habitat, eulachon spawning habitat, herring spawning habitat).*
	Strategy 3.2. Support the implementation of Recovery Strategies for marine species at risk. *Examples and/or potential actions – North Pacific Humpback Whale, Northern Abalone, Northern Resident Killer Whales.*
	Strategy 3.3. Prioritise areas for enhanced seasonal monitoring and restoration.
	Strategy 3.4. Work collaboratively to identify sensitive species and habitats and critical features to support the development of management plans for North Coast spatial zoning.
Obj. 4.	**Protect important cultural components and First Nations values that cannot be protected through a MPA network.**
	Strategy 4.1. Develop management strategies to minimise and mitigate impacts of tenures and development on First Nations practices and values. *Examples and/or potential actions – Incorporate management strategies into tenure conditions. Facilitate community based assessments of threats to First Nations values.*
	Strategy 4.2. Improve monitoring of heritage and cultural sites, and measurement of impacts. *Examples and/or potential actions – Incorporate monitoring results in resource management decisions. Use monitoring results to support changes to best management practices and other non-regulatory protection tools.*
	Strategy 4.3. Develop and use a compatible use matrix for human activities that considers impacts on First Nations practices and sites. *Examples and/or potential actions – Use matrix for future implementation and adaptive management in marine spatial planning.*
	Strategy 4.4. Assess mechanisms that are used to protect vulnerable activities, resources and sites. *Examples and/or potential actions – Legislation, policy, management plans, Best Management Practices, industry standards/codes of practice, First Nations designated cultural areas.*
	Strategy 4.5. Enhance current efforts to limit impacts of activities on cultural practices and sites. *Examples and/or potential actions – Tourism and recreation, industrial development, commercial and recreational fisheries tenured activities.*
	Strategy 4.6. Identify mechanisms to protect areas of economic value to First Nations. *Examples and/or potential actions – Mitigate pollution in shellfish harvesting areas. Minimize disturbance in herring spawn areas, nursery grounds, salmon migration routes.*

4.4 Marine Pollution

As defined in the Canadian Environmental Protection Act, marine pollution includes substances or energy directly or indirectly introduced into the sea by humans that results or may result in: hazards to human health; harm to living resources or marine ecosystems; damage to amenities; or interference with other legitimate uses of the sea (Canada 2014). Marine pollution enters the sea from marine or land based activities and includes a variety of organic discharges, debris, and biological, chemical, hydrocarbon and energy inputs (e.g., vessel traffic noise, seismic testing and thermal pollution from processing plants and energy-generating facilities) (Faggetter 2008).

Marine-based activities that may result in harm to living resources or ecosystems include transportation (e.g., accidental spills, ship groundings and sinkings, vessel discharge), dredging, at-sea disposal of waste, and industrial activity (e.g., mining, forestry, aquaculture). Additionally, infrastructure built to support marine activities (ports, marinas, fuel docks, mills, etc.), and upland uses (settlements, farms, etc.) can introduce unwanted pollutants into the sea.

Energy pollution, particularly underwater noise, is a growing concern. Studies have shown that oceans are getting noisier and there is mounting evidence that underwater noise pollution can interfere with marine animal behaviour such as foraging, navigation and communication. Underwater noise pollution is a concern for the North Coast given the extent of proposed development and associated increases in vessel traffic that may affect North Coast marine space. Underwater noise is most often associated with marine transportation; however, a variety of other human activities can also cause underwater noise that can affect marine species including pile driving, underwater construction, seismic surveys and sonar. Underwater noise pollution can impact a range of marine life including invertebrates, fish and mammals.

Marine pollution impacts marine ecosystems and habitat, species populations and health, human health, and the availability and/or harvest of marine food resources. The interactions and combined impacts of marine pollution, as well as the combined impact of past, present and future events is poorly understood. Therefore, and in light of the potential risks posed by new industrial development, it is important to assess the cumulative effects of pollution in the North Coast plan area and on the MaPP study area as a whole.

Management direction for addressing marine pollution in the North Coast plan area (Table 8) includes pollution prevention, mitigation, remediation and restoration of degraded coastal habitats.

Photo by Jessica Hawryshyn

Table 8. Marine pollution—management objectives and strategies

Marine Pollution	
Obj. 1.	**Improve available information to minimise and mitigate ecological impacts of pollution from activities and infrastructure in marine areas.**
	Strategy 1.1. Identify sensitive anchorages and develop public awareness strategies to mitigate human impacts including human waste.
	Examples and/or potential actions – Identification includes Aboriginal knowledge, Local Knowledge, existing baseline data, harvesting areas and sensitive habitats. Strategies may include permanent anchorage buoys.
	Strategy 1.2. Identify and assess existing tenured activities within culturally and ecologically sensitive and natural heritage sites for pollution impact levels.
	Strategy 1.3. Develop a collaborative monitoring and assessment strategy, which includes indicators and targets/thresholds, between First Nations and relevant monitoring and assessment agencies, industry and other research and user groups.
	Examples and/or potential actions – Identify relevant indicators and targets/thresholds.
	Strategy 1.4. Identify areas particularly vulnerable to pollution and develop and implement mitigation plans.
	Strategy 1.5. Identify locations of derelict vessels and assess the feasibility of removing them from sites in sensitive areas.
	Strategy 1.6. Review and consider policy recommendations on vessel underwater noise pollution.
	Examples and/or potential actions – Identify acoustically quiet areas and assess their potential for permanent protection. Review recommendations for herring and other species sensitive to underwater noise pollution.
Obj. 2.	**Review and, where appropriate, strengthen policies regarding marine pollution and disposal at sea.**
	Strategy 2.1. Review and assess policy and guidelines for marine activities for adherence to international best practices, recommendations from emerging research on marine contamination, and consistency with an ecosystem-based management (EBM) approach.
	Examples and/or potential actions – Logging-related marine activities, fuel storage, aquaculture, industrial discharge standards, grey water and sewage disposal, marine waste disposal sites.
	Strategy 2.2. Where appropriate, work with relevant agencies and industry to recommend amendments to policies and standards of practice for marine activities that are inconsistent with international best practices.
	Strategy 2.3. Promote the establishment of vessel waste disposal infrastructure throughout the plan area.
	Examples and/or potential actions – Identify potential facilities/sites for pump-out stations and create plans and/or incentives to develop local infrastructure.
	Strategy 2.4. Work with local governments and industry to develop or improve action plans for remediation and/or best practices for marine and adjacent upland uses.
	Examples and/or potential actions – Prioritise sites identified by a vulnerability assessment.
	Strategy 2.5. Work with relevant agencies to identify processes for the development of plans and identification of sites for disposal of dredged materials.

Marine Pollution	
Obj. 3.	**Improve habitat around priority areas that have been impacted by marine-related activities.**
	Strategy 3.1. Identify and assess habitats that have been degraded by past provincial tenured activities for restoration potential. *Examples and/or potential actions – Develop or review criteria for what will be considered a degraded site. Use local knowledge. Includes provincial tenured activities such as log handling and storage sites, docks and wharfs.*
	Strategy 3.2. Prioritise, develop and implement habitat restoration plans for identified degraded habitats. *Examples and/or potential actions – Include responsibilities, funding sources, prioritisation of known degraded habitat, opportunities for local participation, and where necessary, develop and implement habitat compensation plans.*
Obj. 4.	**Explore mitigation strategies for areas impacted by acute and/or chronic pollution.**
	Strategy 4.1. Support the establishment of a restoration fund and promote contributions to it by new and existing industries.
	Strategy 4.2. Assess funding required to restore habitats altered by pollution. *Examples and/or potential actions – Compare costs of restoration for various pollution sources in different habitat types (rocky shorelines, eelgrass meadows, kelp beds, etc.).*

4.5 Marine Response

The North Coast plan area has complex oceanographic conditions, varying seafloor characteristics and severe weather. It is made up of channels, banks and rugged narrow inlets creating challenging conditions for shipping and an environment of increased risk for marine accidents and emergencies. The growing volume of marine traffic and corresponding additional risk in the North Coast region has drawn the attention of governments and communities. The awareness has led to increased federal funding commitments to shore up emergency response capacity, studies to better understand values and risks, and improved policies, plans and procedures to better prepare for, and respond to, emergencies.

Vessel traffic on the North Coast has been steadily increasing and is predicted to increase further as a result of industrial expansion and proposed development (Nuka Research & Planning Group 2013a). The proposals to ship liquefied natural gas and crude oil from facilities on the North Coast, and the associated increase in marine traffic require attention to cumulative effects and contingency planning. The North Coast is ecologically and biologically complex, providing important habitat to innumerable marine species. These productive marine ecosystems underpin the social, economic and cultural fabric of North Coast communities. An accidental spill would have devastating long-term consequences for species, ecosystems, cultures, economies, and the health and wellbeing of North Coast communities.

A recent study commissioned to understand the strengths and weaknesses of the current marine oil spill prevention and response regime pointed to a number of opportunities for improvement. Achieving a world class response system, according to the Nuka (2013) study, will require enhancement to a number of features. Deficiencies were identified for the following:

- Vessel traffic is monitored and, in higher risk areas, actively managed to prevent accidents

- Rescue and salvage resources can be on-scene quickly enough to be effective after an incident or spill
- Geographic areas are prioritized for protection from oil spills
- Contingency planning is comprehensive, integrated, and understood by all relevant parties
- Sufficient equipment can be deployed quickly to respond to a worst-case spill
- Sufficient personnel are available to respond to a worst-case spill
- A process is in place to restore damaged resources and to promote ecosystem recovery after a spill.
- Government ensures compliance and transparency
- All parties actively pursue continuous improvement through research and development and the testing of planning assumptions
- Financial mechanisms and resources meet needs from initiating the response through recovery

Management direction for marine response in the North Coast plan area (Table 9) identifies the need to develop localised Geographic Response Plans that engage First Nations and local communities in identifying and prioritising valued and vulnerable areas. Included is an assessment of community capacity and provision of training, equipment and infrastructure required to respond in the event of a large-scale spill or other event in North Coast plan area. Local engagement, information sharing and capacity building are critical to successful response planning and performance. Securing adequate funding to support these activities requires exploring new mechanisms for industry accountability and community empowerment.

Photo by Renny Talbot

Table 9. Marine response—management objectives and strategies

Marine Response	
Obj. 1.	**Improve available information and data-sharing agreements to protect important social, cultural, ecological and economic areas.**
	Strategy 1.1. Identify important First Nations cultural values and sites.
	Examples and/or potential actions – Includes spill vulnerability assessment information and integration of data into existing databases, where possible, and/or build where required.
	Strategy 1.2. Identify important areas of cultural, economic and ecological value to local communities and stakeholders.
	Examples and/or potential actions – Includes spill vulnerability assessment information and integration of data into existing databases, where possible, and/or build where required.
	Strategy 1.3. Work with relevant agencies to identify vessel places of refuge in the North Coast plan area.
	Examples and/or potential actions – Incorporates input from First Nations, local communities, industry and responsible agencies.
	Strategy 1.4. Develop agreements and/or partnerships and information-sharing protocols to ensure communication and efficient flow of information and data between levels of government, industry and relevant organisations.
	Examples and/or potential actions – May require development of locally specific data-sharing arrangements. The most sensitive data would be shared at appropriate times, as needed.
Obj. 2.	**Develop components of Geographic Response Plans for the North Coast.**
	Strategy 2.1. Ensure Geographic Response Plan development and decision-making arrangements and structures exist and appropriate parties participate.
	Strategy 2.2. Identify Geographic Response Plan spatial units and corresponding staging and response locations.
	Examples and/or potential actions – Incorporates input from First Nations, local communities, industry and responsible agencies.
	Strategy 2.3. Create an inventory of First Nations and local communities' capacity to accommodate a large workforce and provide staging or equipment storage.
	Examples and/or potential actions – Identify locations for hubs, designate response areas and ensure adequate equipment and logistics are in place.
	Strategy 2.4. Work with relevant agencies to identify sites that are suitable for the safe disposal of contaminated wastes.
	Examples and/or potential actions – Incorporates input from First Nations, local communities, industry and responsible agencies.

Marine Response	
Obj. 3.	**Ensure systems are in place and sufficient personnel are trained and available to respond.**
	Strategy 3.1. Assess spill preparedness and response management capacity in the plan area.
	Strategy 3.2. Support the use of, and training in, Incident Command System (ICS) for all spill response activities.
	Strategy 3.3. Identify other training needs and establish training opportunities for First Nations and coastal communities.
	Strategy 3.4. Establish and maintain incident response preparedness teams in specific communities along the North Coast.
Obj. 4.	**Ensure sufficient funds are available in the North Coast plan area for planning, response and recovery activities.**
	Strategy 4.1. Ensure First Nations and local communities have access to funding to provide services during an incident response.
	Strategy 4.2. Work with responsible agencies, industry and local communities to establish an independent fund or augment existing funds to support spill response activities. *Examples and/or potential actions – Funds are available to fully implement planning, response and recovery efforts.*
	Strategy 4.3. Explore mechanisms for improving shoreline classification and sea floor mapping.
	Strategy 4.4. Explore mechanisms for obtaining full funding from responsible parties for recovery efforts.
Obj. 5.	**Ensure sufficient marine safety and response capacity.**
	Strategy 5.1. Work with relevant agencies to ensure sufficient capacity for timely search and rescue operations in the plan area. *Examples and/or potential actions – Agreements and/or partnerships to improve marine safety and response capacity, development of information-sharing protocols between levels of government, industry and organisations, and determination of places of refuge for able and disabled vessel anchoring and shelter.*
	Strategy 5.2. Enhance capacity and equipment for search and rescue operations in outlying communities and First Nations villages. *Examples and/or potential actions – An adequate number of responders are trained at each response hub, and permanent locations are identified to store search and rescue readiness equipment.*

4.6 Tenured Activities: Land Policies and Procedures

Crown land tenures are a tool for securing access to Crown lands and are an important component of commercial, industrial, private and public development and infrastructure in BC. Applications can be submitted for tenures that permit the following uses/activities: renewable energy, aquaculture, oil and gas, utilities, log handling and storage, marinas, yacht clubs, private moorage, disposal at sea, towboat reserves, docks, boat launches, floating communities, commercial recreation and conservation.

The *Land Act* and its regulations and policies guide the administration of tenures in BC's terrestrial and marine areas. *Land Act* tenures cover periods of 1-30 years and include permits, licences of occupation, leases, easements and statutory rights-of-way. *Land Act* Notations of Interest are used to identify areas that are of interest to another provincial ministry or agency. Notations of Interest flag geographical areas so that the interest is identified when applications for tenures are brought forward.

It is the Crown's legal obligation to consult, and seek to accommodate, First Nations when Aboriginal rights may be infringed upon by development projects in their territory. The duty to consult is triggered for most government decisions regarding Crown land and resources, including requests for new tenures or changes to existing tenures. The extent of consultation required is determined by a number of factors, including the degree to which the proposed decision or activity could impact Aboriginal interests. In general, the required level of engagement and related timelines increase as the issues related to an activity or decision become more substantial and complex.

The Crown introduces a proposed activity through the referral process. Due to the increasing number of projects being proposed in the North Coast plan area and the associated increase in referrals, First Nations and local governments are experiencing ongoing challenges in responding to referrals. In addition, inconsistent application of provincial *Land Act* tenuring policy regarding First Nations engagement has been identified as an ongoing challenge.

The province and First Nations have explored and implemented agreements to address provincial tenuring and capacity issues in many areas of the province. First Nations on the North Coast that are not signatories to any existing agreements are seeking mechanisms to enhance their engagement and capacity in the tenuring process. All Nations are exploring increased opportunities for shared decision-making in resource management and development on the North Coast.

General tenuring management direction in the North Coast plan area (Table 10) aims to improve communication and support relationship building between tenure proponents and First Nations and reduce the financial burden of the referral process on First Nations. Direction is also given on improving the clarity of tenuring and regulatory requirements for tenured operations and proponents.

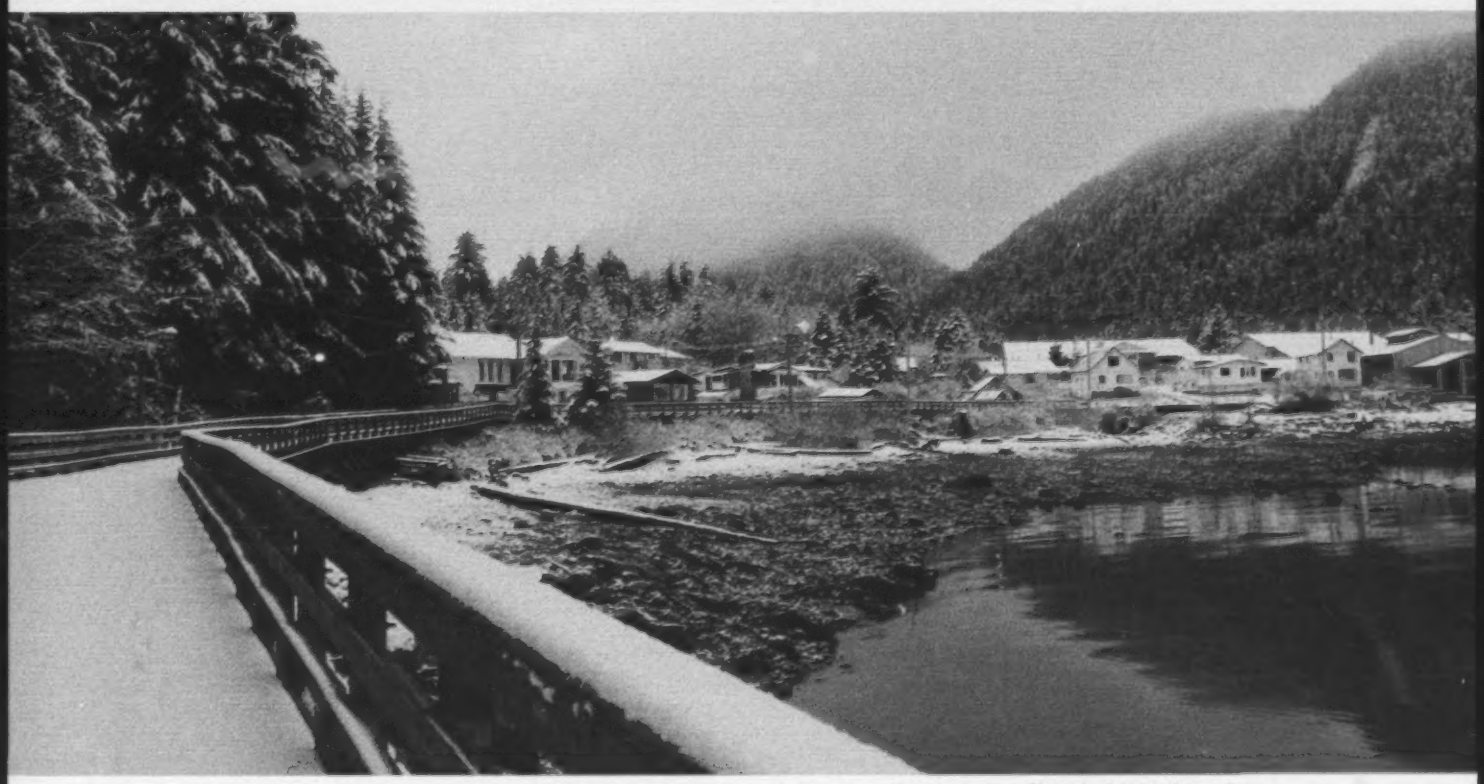


Photo by Jessica Hawryshyn

Table 10. Land Policies and Procedures—management objectives and strategies

Tenured Activities: Land Policies and Procedures	
Obj. 1.	**Support relationship building between tenure proponents and First Nations.**
	Strategy 1.1. Facilitate development and implementation of agreements between First Nations and tenure proponents, where appropriate.
	Examples and/or potential actions – Agreements may outline local employment commitments, best practices, and operating areas.
	Strategy 1.2. Review provincial Crown Land policies and procedures and, where appropriate, incorporate relationship building between proponents and First Nations as a component of due diligence in tenure approval or renewal.
	Examples and/or potential actions – Provincial land use operational policy for ocean energy projects.
	Strategy 1.3. Develop a handbook for proponents about best practices and legal obligations regarding First Nations consultation, which includes protocol agreement templates.
	Strategy 1.4. Facilitate communication of First Nations marine use plans, consultation policies and other relevant documents.
	Strategy 1.5. Enhance First Nations capacity for referral management and response.
	Examples and/or potential actions – Identify needs and develop mechanisms to enhance capacity.
Obj. 2.	**Improve clarity of tenuring policy and regulatory requirements for tenured operations.**
	Strategy 2.1. Develop a communications strategy to improve clarity about tenuring and regulatory policies.
	Examples and/or potential actions – Survey industry operators.
	Strategy 2.2. Assess the cumulative effects of activities when considering applications for tenure.
	Examples and/or potential actions – Incorporate cumulative effects assessments into siting decision-making.
	Strategy 2.3. Develop an engagement process for proponents and industry to inform tenure decision making within North Coast Special Management Zones.
	Examples and/or potential actions - Develop timeline and structure for discussions/conflict resolutions.
Obj. 3.	**Explore opportunities for enhancing First Nations role in tenure decision-making.**
	Strategy 3.1. Explore mechanisms to increase dialogue between governments regarding tenure applications.

4.7 Tenured Activities: Renewable Energy

Renewable marine energy technology includes wave (wave energy, wave power), tidal power (ocean high and low tide) and ocean thermal energy conversion. Additionally, wind energy can be derived using turbines placed offshore in order to access strong and consistent offshore winds. Energy generation turbines are then linked to transmission lines and power stations onshore, usually by submarine cables.

A number of provincial initiatives support the development of renewable energy. In 2007, the Province of British Columbia released the *BC Energy Plan*, which is intended to encourage renewable energy projects and address development plans, pricing, and electricity purchase agreements and applications for remote communities or small-scale projects. In November 2009, the Province appointed a "Green Energy Advisory Task Force" to

recommend strategic action for turning BC's clean power potential into real economic, environmental and social benefits. Strategies for community engagement and First Nations partnerships are included in the *Green Energy Advisory Task Force Report*. In addition, the provincial Ministry of Forests, Lands and Natural Resource Operations has a land use operational policy for ocean energy projects. The policy includes options for an investigative licence or permit during the monitoring and investigation phase of a proposed project.

Renewable sources of energy are an important alternative (or supplement) to existing power generation systems and provide a potential opportunity for generating long-term revenue. The barriers to marine-based renewable energy and offshore wind energy development on the North Coast include high start-up costs, long distances to major markets, and difficulties in accessing transmission lines and the energy grid.

Management direction encourages the development of renewable energy in the North Coast plan area while creating local economic benefits and addressing potential ecological impacts of the industry (Table 11).

Table 11. Renewable energy—management objectives and strategies

Tenured Activities: Renewable Energy	
Obj. 1.	**Increase First Nations and local community economic benefits from renewable energy activities.**
	Strategy 1.1. Develop a North Coast plan for supporting marine and offshore wind renewable energy development.
	Examples and/or potential actions – Identify linkages between existing renewable energy plans and the North Coast plan area. Identify projects and markets through OpportunitiesBC or similar initiatives.
	Strategy 1.2. Encourage meaningful involvement of First Nations and local communities in marine and offshore wind renewable energy opportunities.
	Examples and/or potential actions – Investigate funding sources and opportunities to support local and First Nations participation in marine and offshore wind renewable energy development.
Obj. 2.	**Promote the viability of the marine and offshore wind renewable energy sector on the North Coast.**
	Strategy 2.1. Maintain renewable energy opportunities through Renewable Energy Special Management Zones.
	Examples and/or potential actions – Ensure opportunities are consistent with ecosystem-based management objectives.
	Strategy 2.2. Work with industry to promote the development of information programs, workshops and education sessions on the risks, benefits and other implications of marine-based renewable energy technologies.
	Examples and/or potential actions – Partner with industry groups (e.g., Marine Renewables Canada).
	Strategy 2.3. Explore opportunities for marine and offshore wind renewable energy demonstration projects on the North Coast.
	Examples and/or potential actions – Identify and apply site suitability criteria.

Tenured Activities: Renewable Energy	
Obj. 3.	**Identify, minimise and mitigate impacts of marine and offshore wind renewable energy projects.**
	Strategy 3.1. Minimise and mitigate the impacts of renewable energy project activities on marine ecosystems, First Nations cultural values and other users.
	Examples and/or potential actions – Sponsor expert report on the potential impacts of renewable energy development on North Coast ecosystems and values, and mitigation strategies.
	Strategy 3.2. Assess the cumulative effects of any new marine and offshore wind renewable energy projects when considering tenure applications.
	Strategy 3.3. Review and update policy and criteria to aid siting and tenuring decisions, where appropriate.

4.8 Tenured Activities: Shellfish and Marine Plant Aquaculture

The governments of Canada and British Columbia work collaboratively to manage and regulate the aquaculture sector. Fisheries and Oceans Canada (DFO) is responsible for regulating, monitoring and licensing finfish and shellfish aquaculture operations in British Columbia. The Ministry of Forests, Lands and Natural Resource Operations is responsible for authorizing the occupation of provincial Crown land associated with aquaculture facilities and for other approvals necessary for the culture of aquatic plants.

In 2008, the provincial government suspended the issuance of new tenures for finfish aquaculture in tidal waters north of Aristazabal Island. First Nations on the North Coast who are participating in the development of this marine plan oppose lifting the moratorium, and there is limited support for the expansion of finfish aquaculture on the North Coast. Individuals and organisations with an interest in aquaculture are choosing to pursue shellfish and marine plant aquaculture.

Despite the high biophysical capability for shellfish and marine plant aquaculture on the North Coast, the industry is still in an early stage of development. In BC, many species of shellfish are cultured commercially or are being researched for their potential as aquaculture species. Mussels, oysters, clams and scallops are the main species cultured in BC. New species such as abalone, geoducks, sea urchins, giant kelp, bull kelp, seaweed and sea lettuce are under development and commercialization. Currently, there are limited local economic and employment benefits from aquaculture activities. Coastal First Nations and the North Coast–Skeena First Nations Stewardship Society have worked with federal and provincial agencies and partners in establishing coordinated commercial shellfish aquaculture hatchery and farming operations.

Management direction for North Coast aquaculture (Table 12) aims to increase local economic benefits from shellfish and marine plant aquaculture activities while addressing potential negative ecological impacts from aquaculture activities.

Table 12. Shellfish and marine plant aquaculture—management objectives and strategies

Tenured Activities: Shellfish and Marine Plant Aquaculture	
Obj. 1.	**Minimise and mitigate the negative ecological impacts from shellfish and marine plant aquaculture activities.**
	Strategy 1.1. Work with relevant agencies to support and contribute to the development of integrated shellfish and marine plant aquaculture management plans. *Examples and/or potential actions – Assist with developing management plans that follow an ecosystem-based management approach. Identify and assess the effects of climate change on aquaculture.*
	Strategy 1.2. Work with relevant agencies to clarify the management, monitoring and restoration responsibilities of governments and industry.
	Strategy 1.3. Compile research on the ecological risks and impacts of shellfish and marine plant aquaculture activities.
Obj. 2.	**Increase First Nations and local community economic benefits from shellfish and marine plant aquaculture activities.**
	Strategy 2.1. Support the creation or updating of First Nations shellfish aquaculture economic development plans. *Examples and/or potential actions – Identify suitable and capable sites for deepwater and beach cultivation on the North Coast at fine spatial scales. Use business cases to secure funding.*
	Strategy 2.2. Develop a marketing and product development plan that supports the creation of a sustainable shellfish and marine plant aquaculture industry on the North Coast. *Examples and/or potential actions – Review and assess existing marketing plans. Enhance and/or focus the plans for the North Coast plan area in partnership with First Nations, government and industry.*
	Strategy 2.3. Encourage opportunities for First Nations and local investment, partnership and participation in the processing of shellfish and marine plant aquaculture products. *Examples and/or potential actions – Build relationships and linkages between existing aquaculture companies, local communities and First Nations.*
	Strategy 2.4. Promote local processing of shellfish and marine plant aquaculture products in the North Coast region. *Examples and/or potential actions – Ensure local processing requirements are understood and met as the industry develops over time.*
	Strategy 2.5. Improve clarity of tenuring and regulatory requirements for new shellfish and marine plant aquaculture operations, including First Nations approval, monitoring and management. *Examples and/or potential actions – Develop communications materials (e.g., a website) that outline the regulatory steps for industry development. Refer to the work of the Aboriginal Aquaculture Association.*
	Strategy 2.6. Identify, develop and implement training opportunities in shellfish and marine plant aquaculture for both North Coast First Nations and local communities. *Examples and/or potential actions – Explore partnerships between local institutions and others that currently offer aquaculture technician programs.*
	Strategy 2.7. Communicate viability of shellfish and marine plant aquaculture within the plan area, in particular, the Aquaculture Special Management Zones. *Examples and/or potential actions – Promote development in Aquaculture Special Management Zones where biophysical capability and economic viability have already been assessed.*

Tenured Activities: Shellfish and Marine Plant Aquaculture	
	Strategy 2.8. Evaluate potential new aquaculture species opportunities and vulnerabilities due to climate change.
Obj. 3.	**Protect First Nations uses and values from the impacts of shellfish and marine plant aquaculture activities.**
	Strategy 3.1. Support First Nations engagement in tenuring decision-making for shellfish and marine plant aquaculture development in their territories.
	Examples and/or potential actions – Develop a consistent provincial tenuring policy for First Nations engagement.
	Strategy 3.2. Support First Nations monitoring of shellfish and marine plant aquaculture impacts.
	Examples and/or potential actions – Identify needs and priority areas for monitoring. Ensure funding and capacity for field monitoring and data collection.

4.9 Tenured Activities: Marine-based Forestry Operations

Marine-based forestry operations are an important component of coastal logging operations. Timber is transported by truck to log dumps, where log bundles or individual logs are slid into the water or logs are placed in the water by helicopters. The logs are then organised into log booms and transported by tug and/or barge to off-site sort yards, mills and shipping ports for further manufacturing or export.

Log handling and storage are site-specific logging-related marine activities tenured by the Province of British Columbia. Tenure applications are handled by the Land Tenures Branch of the Ministry of Forests, Lands and Natural Resource Operations. As of 2013, there were 88 log handling and storage tenures in the North Coast plan area, 13 of which were applications. Provincial tenures range from 2 to 30 years; the length of tenure for a specific site depends on the volume being removed, rate of harvest and market conditions. Sites are typically used on a seasonal basis. A significant portion of the timber available for harvest is accessible only by helicopter. Due to the short-term nature of heli-logging activity, conflicts with other users are short in duration. Log transportation by tug, barge, or ship is regulated by Transport Canada and is generally outside of tenured areas.

The forest industry has been an integral part of the North Coast's socioeconomic structure and has contributed to the development and viability of transportation and other infrastructure. The labour force involved in forestry in the North Coast plan area has been declining in numbers and percent of the total labour force. Associated infrastructure has also been lost in the North Coast plan area. The last pulp mill, located in Port Edward, closed in 2001. The sawmill in Oona River is small and currently has limited production. Consequently, most logs harvested in the North Coast region are now sent to mills on Vancouver Island or the Lower Mainland, or are exported to the U.S. or overseas. Forestry is still important to the North Coast economy despite mill closures and related regional economic declines.

Management direction for marine-based forestry operations in the North Coast plan area (Table 13) focuses on enhancing local understanding of, and benefits from, the log handling industry, and addressing the ecological impacts of logging-related marine activities.

Table 13. Marine-based forestry operations—management objectives and strategies

Tenured Activities: Marine-based Forestry Operations	
Obj. 1.	**Enhance local understanding of a viable and sustainable log handling industry.**
	Strategy 1.1. Partner with industry to identify and communicate the forest industry's reliance on marine areas for logging operations.
	Examples and/or potential actions – Review current literature. Create a pamphlet for distribution.
	Strategy 1.2. Communicate the current regulatory requirements, policies and practices of log handling activities.
	Examples and/or potential actions – Develop communications materials that clarify the rules and regulations governing marine log handling activities and the practices that industry uses to comply with those regulations.
	Strategy 1.3. Evaluate the potential for alternative uses of log handling and storage sites during inactive periods.
	Examples and/or potential actions – Inventory inactive sites and determine their suitability for recreation or tourism use. Include the identification of liability issues.
	Strategy 1.4. Ensure the forest industry has access to a network of log handling and storage sites that accommodate industry requirements while considering the needs of First Nations and other user groups.
	Strategy 1.5. Communicate and promote examples of Best Management Practices used by the industry.
Obj. 2.	**Minimise and mitigate ecological impacts of logging-related activities in marine areas.**
	Strategy 2.1. Encourage industry to continue to develop, update and implement Best Management Practices for log handling and other forestry activities that can affect marine values.
	Examples and/or potential actions – Develop opportunities for First Nations involvement in compliance monitoring of activities associated with marine log dumps. Track compliance with ecological standards, such as water quality.
	Strategy 2.2. Identify inactive tenured sites and assess sites for remediation potential.
	Examples and/or potential actions – Prioritise sites with high remediation potential. Confirm long-term plans with the forest industry before assessing specific inactive sites for remediation.
	Strategy 2.3. Develop a strategy for the remediation and restoration of log handling and storage sites that are no longer required.
	Examples and/or potential actions – Investigate potential funding opportunities for remediation and restoration of prioritised log handling and storage sites.

4.10 Tourism and Recreation

Tourism and recreation encompasses a variety of activities pursued independently or provided by commercial service providers. Popular coastal and marine tourism and recreation activities include wildlife viewing (e.g., whale watching), nature photography, boating/cruising, surfing, scuba diving, kayaking and canoeing. Cultural and heritage tourism is a growing segment of the tourism market.

Commercial tourism and recreation operators provide various services for a fee (e.g., accommodation and meals, gear and equipment, interpretation, transportation, etc.), and can include tenured components (e.g., floating lodges). The province is responsible for authorizing public and commercial tenures including fishing lodges,

tidal sports fishing camps and guided nature viewing. Tourism and public recreation activities are facilitated by supporting infrastructure such as anchorages, public and private marinas, and service facilities.

First Nations on the North Coast have an interest in defining emerging tourism products that incorporate aspects of ecotourism and cultural tourism. First Nations see the tourism and recreation sector as an opportunity for diversifying economies while also sustaining the natural resource base. In particular, there is interest in pursuing ecotourism that contributes to livelihoods while respecting rights and culture. First Nations culturally based tourism operations currently exist, including those of the Metlakatla and Gitga'at, and there is potential for growth. First Nations want to have adequate and equitable participation in the planning, management and coordination of the commercial marine tourism and recreation industry.

Management direction for North Coast tourism and recreation (Table 14) focuses on opportunities for developing local tourism in order to increase economic benefits for local communities. The impacts of tourism and recreation on wildlife, natural areas, cultural areas and First Nations, and user groups will be assessed, monitored and addressed. Growth in the North Coast tourism and recreation sector will be managed in a way that ensures negative impacts to values are minimised. Public and tenured commercial recreational fishing is discussed in Section 4.11.

Photo by Jessica Hawryshyn

Table 14. Tourism and recreation—management objectives and strategies

Tourism and Recreation	
Obj. 1.	**Explore opportunities for appropriate tourism development in the North Coast plan area.**
	Strategy 1.1. Conduct a carrying capacity and tourism opportunity study for the North Coast.
	Examples and/or potential actions – Build on existing tourism opportunity studies and update as appropriate. Identify impacts of tourism on the natural and cultural environment to determine social and ecological carrying capacities. Identify barriers to tourism development (i.e. water access).
	Strategy 1.2. Create a tourism management plan for the North Coast that includes identifying appropriate levels and forms of tourism activity in specific locations.
	Examples and/or potential actions – The spatial component would take into consideration sensitive ecosystems and cultural sites.
	Strategy 1.3. Work with stakeholder groups to identify appropriate marine access campsite locations.
	Examples and/or potential actions – A field guide developed with industry and First Nations input.
	Strategy 1.4. Conduct an assessment of vulnerable sites and identify mechanisms for increasing resilience to the impacts of tourism.
	Examples and/or potential actions – Install mooring buoys in areas sensitive to high use.
	Strategy 1.5. Develop and implement outreach and interpretive programs to improve awareness of local cultures and traditions, including First Nations interpretive signage throughout their territories.
	Examples and/or potential actions – Develop Nation-specific programs to properly manage communication of traditions.
	Strategy 1.6. Develop consistent provincial policy to incorporate relationship building and agreements between proponents and First Nations as a component of due diligence in tourism-based tenure approval or renewal.
	Strategy 1.7. Develop tourism and recreation opportunities through Tourism and Recreation Special Management Zones.
Obj. 2.	**Ensure sufficient tourism and recreation monitoring and enforcement structures are in place.**
	Strategy 2.1. Develop a tourism monitoring plan.
	Examples and/or potential actions – Outline structures for monitoring and enforcement of tourism activities. Ensure funding is in place to implement the monitoring plan.
	Strategy 2.2. Integrate Guardian Watchmen and other First Nations monitoring programs to assist with enforcement of tourism policy and legislation.
	Examples and/or potential actions – Establish agreements to enhance First Nations involvement.
Obj. 3.	**Minimise and mitigate the negative impacts of tourism and recreation activities and facilities.**
	Strategy 3.1. Work with relevant agencies to review and/or modify existing coastal and marine wildlife viewing protocols, guidelines and regulations to minimise negative impacts on key species and First Nations activities.
	Examples and/or potential actions – Inventory and review existing coastal and marine wildlife viewing protocols. Update existing protocols that are considered to be inadequate, using international best practices and in consultation with appropriate agencies and stakeholders. Draft new protocols, where needed, in consultation with appropriate agencies and stakeholders.

Tourism and Recreation	
	Strategy 3.2. Improve communication of existing coastal and marine wildlife viewing protocols, guidelines and regulations.
	Examples and/or potential actions – Make print and web-based communications materials available to user groups and commercial tourism operators. Use social media to broadcast protocols.
	Strategy 3.3. Identify, prioritise and coordinate the development of infrastructure for appropriately located marine recreation sites.
	Examples and/or potential actions – Develop criteria for selecting and siting infrastructure. Provide safe and accessible anchorages and appropriately placed camping sites.
	Strategy 3.4. Identify mechanisms for protecting archaeological sites, heritage sites and First Nations cultural areas.
	Examples and/or potential actions – Assess current impacts and identify mitigations.
	Strategy 3.5. Reduce conflicts between commercial guided hunting and ecotourism operations.
	Examples and/or potential actions – Collaboratively establish mechanisms for conflict avoidance and resolution.
Obj. 4.	**Assess opportunities for marine tourism and encourage local tourism development.**
	Strategy 4.1. Build on and/or conduct tourism feasibility and impact assessments to evaluate community and regional tourism potential.
	Examples and/or potential actions – Conduct an inventory of tourism assessments that are relevant to the North Coast plan area. Update where possible and/or develop new feasibility and impact assessments. Identify factors that limit tourism development.
	Strategy 4.2. Improve capacity building, product development and marketing initiatives.

4.11 Marine Fisheries Economy

The North Coast plan area supports valuable and diverse fisheries economies that have significant cultural, economic and social value. Although marine fisheries are regulated primarily by the federal government, marine infrastructure, processing, branding and marketing are under provincial jurisdiction, and these activities contribute to the marine fisheries economy. The marine fisheries economy is defined as all of the direct and indirect social, cultural and economic benefits derived from current commercial fishing, recreational fishery service providers, recreational fishing and shellfish and marine plant aquaculture. The province and partner First Nations have a vital interest and role in this economy, including fish and seafood processing, distribution, retailing, business development and skills training, disposition of tenures, and maintenance of associated infrastructure.

The fisheries economy creates complex networks between fishers, their families, marine ecosystems, and the community at large. Fisheries also link people to each other, to their communities and to their sense of place, providing social, economic, health and cultural benefits.

In this plan, the description of recreational fisheries focuses on tidal fisheries. Fisheries and Oceans Canada (DFO) is responsible for regulating sport fishing in tidal waters, and sets regulations for the type, number and size of fish that can be caught and retained, the gear that can be used, and the areas that can be fished. A DFO Tidal Waters Sport Fishing Licence is required for the recreational harvest of all species of fish and shellfish from tidal waters.

Commercial fishing is regulated and managed by the federal government under the *Fisheries Act*, *Oceans Act*, *Species at Risk Act* and *Canada Shipping Act*). Commercial fishing has been under restructure since the 1990s;

implementation of fleet rationalisation plans, precautionary management and other policies has significantly reduced the number of First Nations and locally owned and operated licences and vessels.

First Nations' inherent Aboriginal fishing rights are protected under the Canadian Constitution. Aboriginal fishing rights are second only to conservation and public safety requirements, and have management priority over commercial and recreational fisheries. The Nisga'a Treaty contains provisions regarding Nisga'a rights to harvest fish as well as a Harvest Agreement which allows for the sale of certain amounts of fish.

First Nations fisheries are culturally and economically important, enhancing community food security and supporting cultural practices and social structures. First Nations in the plan area have deep historical and cultural ties to the commercial fishery on the North Coast, and continue to highly value participation in all aspects of commercial fisheries. Investments in plants, equipment, product development and human resources are needed to ensure long-term viability of a community based fisheries economy.

Over the last 50 years, the regional and global seafood industry has become increasingly competitive and BC industries have had to adapt and reposition. A growing sustainability ethic is shaping the seafood industry in BC. Seafood sustainability puts an emphasis on initiatives such as certification, eco-labeling, traceability, and monitoring. Traceability systems capable of detailing the journey of seafood along complicated supply chains are becoming a crucial component of efforts to advance food safety, strengthen sustainability efforts, and improve product quality and business process efficiencies.

Photo: courtesy of Kitsumkalum Nation

There is also a strong trend towards value-added seafood products. Value addition often involves some processing such as filleting, canning, smoking, salting or freezing. Local projects for adding value to fisheries products attempt to close the gap between fishers and consumers, and small scale, locally situated processing facilities can create much-needed job opportunities in small coastal communities.

The ability to deliver high-quality, high-value seafood products to market requires proper orientation and cooperation across a long value chain, from fisheries regulators to harvesters and growers, processors and distributors. Investments in infrastructure, equipment, product development, marketing, promotion and human resources (i.e., training) can help to ensure the long-term viability of the seafood sector.

Management direction for the marine fisheries economy in the North Coast plan area (Table 15) aims to make improvements to governance, data collection and monitoring, training and skills development, and infrastructure required for maintaining a sustainable marine fisheries economy. First Nations access to marine resources for cultural uses and food security is addressed.

Table 15. Marine fisheries economy—management objectives and strategies

Marine Fisheries Economy	
Obj. 1.	**Increase local economic benefit from sustainable fishing activities.**
	Strategy 1.1. Support independent fishers and fisheries-related tenure holders so they can establish and thrive in coastal communities.
	Examples and/or potential actions – Diversify and increase local fisheries-related activities. Maintain inputs to local economies from fishing enterprises. Explore mechanisms to support fishing enterprises, including financing, infrastructure and training.
	Strategy 1.2. Work with appropriate government agencies and industry to promote and enhance current seafood traceability and sustainability program efforts.
	Examples and/or potential actions – Inventory existing traceability programs. Broaden the awareness of, and participation in, these programs. Where possible link to branding efforts for North Coast products.
	Strategy 1.3. Explore opportunities for local community and First Nations investment, partnership and participation in local seafood processing activities.
	Examples and/or potential actions – Identify opportunities for, and constraints to, local processing, including examination of small-scale cooperative operations. Develop a report that documents opportunities.
	Strategy 1.4. Support development of value-added markets for North Coast products.
	Examples and/or potential actions – Develop feasibility studies and marketing strategies, such as standardised logos and packaging. Identify new and expandable export markets.
	Strategy 1.5. Explore mechanisms for enhancing local economic benefits from fisheries-related activities.
	Examples and/or potential actions – Increase local participation in fisheries-related activities. Develop a report on structures and programs used by coastal communities to enhance local benefits of fisheries, and include community-based licence banks.
	Strategy 1.6. Explore models for intensified production and stock enhancement of local fisheries.
	Examples and/or potential actions – Research international efforts to improve the viability of commercial fisheries, such as those in Alaska.

Marine Fisheries Economy	
Obj. 2.	**Establish collaborative structures and relationships to enhance fisheries sustainability and viability.**
	Strategy 2.1. Work with relevant agencies to establish a collaborative structure for enhanced cooperation, integrated planning and conflict resolution on BC fisheries issues.
	Examples and/or potential actions – Include governments, communities and industry to resolve spatial conflicts and resource competition. Provide an arena for governments, marine industries and tenure holders to collaborate.
	Strategy 2.2. Explore opportunities that engage governments and stakeholders in ongoing adaptive management that is based on ecosystem-based management principles.
	Strategy 2.3. Encourage the establishment of protocol agreements between North Coast First Nations and fisheries-related tenure holders.
	Examples and/or potential actions – Protocol agreements could include targets for growth in the number of fishing lodges, commitments to sustainable fishing practices and local employment targets.
	Strategy 2.4. Explore models for funding local habitat enhancement and monitoring programs from commercial, recreational and public fishing licensing and activities.
	Examples and/or potential actions – Create a summary report of models from around the world that channel fees collected from permitting and licensing to local habitat initiatives, and include best practices and lessons learned.
Obj. 3.	**Improve the infrastructure required by marine fisheries.**
	Strategy 3.1. Prepare a review of marine infrastructure requirements, including First Nations, commercial, and recreational fisheries requirements, in the North Coast plan area in cooperation with industry and stakeholders.
	Examples and/or potential actions – Create a report that outlines infrastructure needs and includes an inventory of current structural and service status.
	Strategy 3.2. Develop an action plan for addressing priority infrastructure gaps and weaknesses.
	Strategy 3.3. Support opportunities for developing green infrastructure that promotes ecologically friendly boating practices.
	Examples and/or potential actions – Develop recycling depots for oil and other marine vessel waste.
Obj. 4.	**Increase local skill development and capacity in fisheries-related activities.**
	Strategy 4.1. Work with appropriate government agencies, industry and others to develop and implement skills and training programs for fisheries-related activities.
	Examples and/or potential actions – Skills training for seafood marketing, at-sea fisheries observers, training and certification for tidal angling guides.
	Strategy 4.2. Work with appropriate government agencies, industry and others to develop programs to increase local participation in fisheries-related activities.
	Examples and/or potential actions – Promote programs through high school outreach programs and local job fairs.
	Strategy 4.3. Support fishing industry efforts regarding training, certification and professionalization.
	Examples and/or potential actions – Work with Fish SAFE BC, the Canadian Council of Professional Fish Harvesters and other industry organisations to communicate benefits and requirements of training and certification.

Marine Fisheries Economy	
Obj. 5.	**Protect Aboriginal fisheries and improve understanding of Aboriginal fishing rights.**
	Strategy 5.1. Identify activities that conflict with First Nations use, and proactively manage to provide for current and future use.
	Examples and/or potential actions – Create a report that identifies spatial or temporal conflicts. Use the report to inform the tenure application process.
	Strategy 5.2. Promote research that investigates solutions to First Nations food security and marine resource use challenges.
	Examples and/or potential actions – Species and habitat inventory research, food security research.
	Strategy 5.3. Work with appropriate government agencies, industry and others to support First Nations programs to train and retain commercial fishers and to expand and diversify their fisheries involvement.
	Strategy 5.4. Develop information for recreational fishers regarding First Nations rights to harvest, monitor and manage resources in their territories.
	Examples and/or potential actions – Develop and distribute communications materials to improve understanding and reduce conflict.
	Strategy 5.5. Minimise impacts from provincially tenured activities on First Nations values by implementing MaPP spatial plans.
	Examples and/or potential actions – Identify and communicate important use areas for First Nations.
Obj. 6.	**Increase First Nations and local community access to marine resources.**
	Strategy 6.1. Implement initiatives to enhance habitats for marine food resources.
	Examples and/or potential actions – Stream enhancement, rehabilitation of degraded sites, species relocation.
	Strategy 6.2. Support mechanisms to reduce impacts on First Nations and local community food resources, including pollution and cumulative effects.
	Examples and/or potential actions – Reduce noise pollution in herring spawning areas, reduce vessel traffic in kelp forests.
	Strategy 6.3. Explore mechanisms to support local community food security.
	Examples and/or potential actions – Identify ways to enhance the ability of local communities to access local marine products.

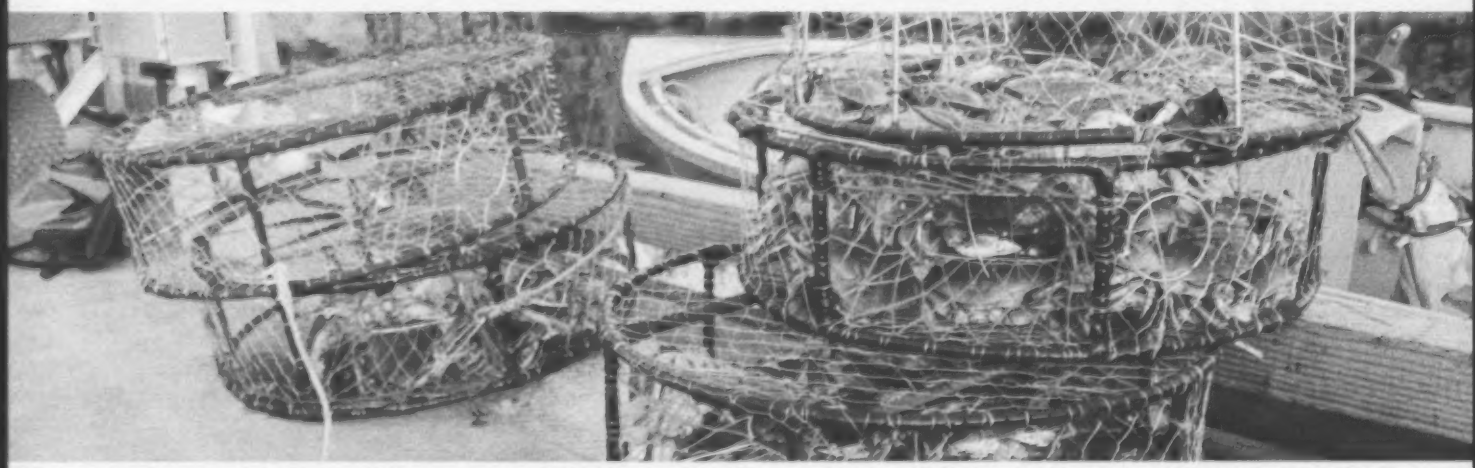


Photo by Jessica Hawryshyn

Marine Fisheries Economy	
Obj. 7.	**Minimise and mitigate negative ecological impacts on fish habitat.**
	Strategy 7.1. Develop a collaborative ecological monitoring strategy between First Nations, relevant agencies, industry and other research and user groups.
	Examples and/or potential actions – Coordinate species and habitat monitoring to help facilitate the implementation of ecosystem-based management initiatives. Prioritise areas that require focused monitoring.
	Strategy 7.2. Identify areas with high ecological and cultural value, and identify risks to those areas.
	Examples and/or potential actions – Identify spawning and nursery areas, and other fish habitat important for life history stages.
	Strategy 7.3. Identify impacts on fisheries resources and habitat from other sources, such as acidification and pollution, and their interaction with impacts from fishing activities.
	Examples and/or potential actions – Assess interactions and cumulative effects.
	Strategy 7.4. Identify and communicate enhancement and restoration roles and efforts of all First Nations, government agencies, industry, nongovernmental organisations and community groups in relation to coastal fisheries.
	Examples and/or potential actions – Create a snapshot report and/or communications materials.
	Strategy 7.5. Communicate the benefits of stable and long-term salmon restoration and habitat enhancement programs.
	Examples and/or potential actions – Develop a communications tool that highlights the ecological, socio-cultural and economic benefits of these programs.
	Strategy 7.6. Enhance First Nation engagement in commercial recreation tenuring decisions and tenure operations in their territories.
	Examples and/or potential actions – Use Aboriginal knowledge regarding recreational fishing carrying capacity.

Photo by Colin Nelson

4.12 Economic Well-Being

The economic well-being of communities and residents is an integral component of the EBM approach. Economic well-being, as related to the marine environment, can be determined by factors such as capacity for local marine-related economic opportunities, sector stability and sustainability, and participation in the (marine) economy.

The contemporary industrial economy of the North Coast has been built largely on a fishing, mining, and forestry resource base, but has also depended on manufacturing (e.g., smelting) and tourism-related activities. Communities along the North Coast that have large port facilities have a historic economic base and culture linked to the processing and transport of natural resources (including seafood and wood products) and goods. Resource cycles have impacted the health of these industries and have led to downturns in the forestry and fishing sectors, in particular.

Developing local job opportunities and training and education opportunities in the North Coast plan area has the potential to create more stable community marine-based economies. Management direction for economic well-being in the North Coast plan area (Table 16) aims to encourage the use of an ecosystem-based approach for marine economic sectors. It also provides direction for identifying opportunities for, and constraints to, increased economic activity, including policy and programs within the North Coast plan area. Several areas have been identified for finer scale planning (see Strategy 2.3 and Figure 5). In these areas, there are different views on what activities should take place, how the activities should be managed, and who should be involved in decision making. These areas are discussed in more detail in Appendix 4.

Table 16. Economic Well-being—management objectives and strategies

Economic Well-being	
Obj. 1.	**Encourage an ecosystem-based approach to marine sector strategic economic plans.**
	Strategy 1.1. Identify gaps in, or inconsistencies between, existing sector economic strategic plans in relation to an ecosystem-based management approach.
	Examples and/or potential actions – Create industry-based report cards.
	Strategy 1.2. Encourage economic sectors operating in the North Coast plan area to incorporate ecosystem-based management principles when developing and/or updating long-term business plans.
	Examples and/or potential actions – Promote the objectives and strategies of the MaPP plan and an ecosystem-based management approach to marine resources to industry and other user groups. Highlight inconsistencies between economic strategies or plans to industry and other user groups.

Economic Well-being	
Obj. 2.	**Promote marine based economic growth and diversification for First Nations and local communities.**
	Strategy 2.1. Identify sustainable marine economic development opportunities and constraints in the North Coast plan area.
	Strategy 2.2. Promote areas identified as high potential for sustainable economic development. *Examples and/or potential actions – Communicate potentials in Tourism, Aquaculture, and Renewable Energy SMZs.*
	Strategy 2.3. Develop local-scale marine use plans with appropriate First Nations, local governments and relevant agencies in areas adjacent to larger communities and/or where development pressures exist, as identified in Figure 5. *Examples and/or potential actions – Provide fine-scale tenuring recommendations through spatial zoning that reflect ecological and cultural values, while supporting adjacent land-based zones, planning and development.*
	Strategy 2.4. Prepare a review of marine infrastructure requirements in the North Coast plan area in cooperation with industry and stakeholders. *Examples and/or potential actions – Conduct an inventory of current structural status and available services.*
	Strategy 2.5. Develop an action plan for addressing priority infrastructure gaps. *Examples and/or potential actions – Work with industry to prioritise infrastructure needs, and investigate solutions to address priorities.*
	Strategy 2.6. Identify potential workforce requirements within the plan area, and assess the capacity of the local population to fill those requirements. *Examples and/or potential actions – Create a report that matches demographic statistics with potential workforce requirements. Coordinate with the regional workforce table (workforce planning).*
	Strategy 2.7. Encourage training, hiring and retention of First Nations and local community residents in marine economic sector jobs. *Examples and/or potential actions – Promote the specific future needs of marine-based industry to First Nations and local community members, with a focus on community youth. Prioritise marine training in the larger skill development programs.*
	Strategy 2.8. Identify mechanisms to minimise and mitigate risks to current and traditional economic activities.
Obj. 3.	**Increase First Nations participation in the marine economy.**
	Strategy 3.1. Communicate to industry and other user groups the benefits of partnerships, agreements and/or joint venture opportunities with First Nations regarding marine economic activities. *Examples and/or potential actions – Create a communication piece similar to "Building Relationships with First Nations." Leverage Opportunities BC to showcase economic development opportunities.*
	Strategy 3.2. Improve First Nations access to training, funding and institutional creation and capacity building that recognises the unique opportunities of, and constraints to, First Nations participation in the marine economy. *Examples and/or potential actions – Explore financing options, training opportunities in First Nations communities, and joint ventures.*

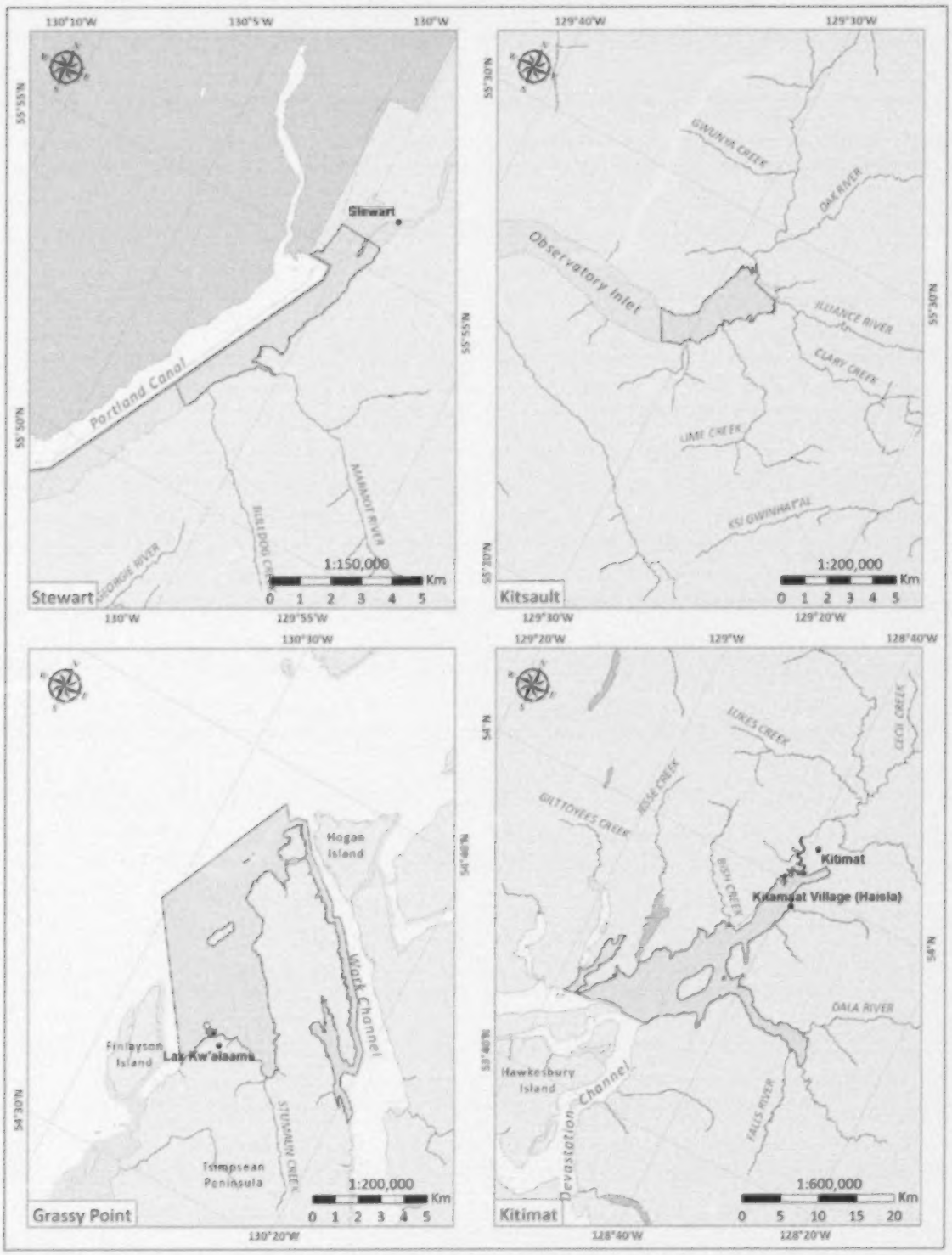


Figure 5. North Coast areas identified in Chapter 4.12, Strategy 2.3 for local-scale marine planning

4.13 Heritage Sites and First Nations Cultural Areas

The North Coast plan area has many sites of ancient or historical value, only some of which are publicly identified and protected. First Nations and local communities are exploring ways to further the protection of places associated with their histories and cultures, including those in marine areas.

First Nations cultural areas are sites and features of importance to First Nations including intertidal archaeological sites, travel routes and places associated with the oral histories of the Nations. Cultural areas are broad areas that are tied directly to Aboriginal and cultural resources and include areas where indigenous activities, including harvesting and production, were, and/or are, pursued. Many sites and features do not exhibit any obvious infrastructure or evidence of use but are of significant social and cultural importance to First Nations. Cultural resources is a term that more broadly encompasses cultural areas as well as activities, sites, objects and resources of cultural value to First Nations.

Archaeological sites are protected under provincial legislation, but not all such sites are publicly identified and documented. First Nations are pursuing collaborative research opportunities to survey sites and features in their territories. Sites that do not exhibit obvious infrastructure, such as spiritual places, pose a significant challenge for protection. First Nations are exploring opportunities and mechanisms to broaden the scope of current legislation to more adequately protect sacred cultural areas.

Heritage sites are associated with the more recent history of the North Coast plan area (i.e., the arrival and settlement of non-Aboriginal peoples). They include marine heritage sites, such as lighthouses, canneries and boatsheds, in addition to coastal sawmills and the remnants and sites of early industrial development, as well as the residences of early settlers. Some heritage sites are protected by regional, provincial or federal legislation. Communities on the North Coast seek support for further local efforts in restoring and protecting historical sites and features.

Management direction for heritage sites and cultural areas in the North Coast plan area (Table 17) include providing protection through proper planning and management, enhanced engagement between proponents and First Nations, and improved public awareness. Additionally, the requirement for proper documentation and inventorying of cultural and archaeological sites is identified. The plan also provides direction on enhancing the benefits and minimising the negative impacts of archaeological, cultural and natural history research activities.

Photo by Theresa Stewart

Table 17. Heritage sites and First Nations cultural areas—management objectives and strategies

Heritage Sites and First Nations Cultural Areas	
Obj. 1.	**Document and inventory North Coast cultural resources and archaeological sites in a manner that recognises data sensitivity.**
	Strategy 1.1. Identify gaps in site identification and data management, and prioritise significant cultural resources and archaeological sites for protection and management.
	Strategy 1.2. Identify funding sources and opportunities to conduct community-based research that documents First Nations knowledge of heritage and archaeological sites.
	Strategy 1.3. Identify opportunities to prioritise and conduct additional surveys for cultural resources and archaeological sites.
	Examples and/or potential actions – Focus effort primarily on sites that have not been publicly documented.
	Strategy 1.4. Expand tenure proponents' archaeological survey obligations to support the identification and protection of sites adjacent to proposed developments.
	Examples and/or potential actions – Collaboratively develop guidelines for determining adjacency and sensitivity.
	Strategy 1.5. Develop a framework that enhances reporting effectiveness and recognises data sensitivity issues when reporting new sites to relevant provincial agencies and First Nations integrated resource management bodies.
	Strategy 1.6. Build a component of a regional monitoring database to record cultural resources and archaeological values and research projects.
	Examples and potential actions - Collaboratively identify how these data will be protected and shared.
	Strategy 1.7. Provide training to First Nations field staff for documenting and recording new archaeological, heritage, and cultural sites to ensure information can be added to the provincial registry.
Obj.2.	**Protect heritage resources and archaeological sites through site planning and management.**
	Strategy 2.1. Develop guidelines for human activities within sensitive cultural and archaeological sites that may inform management direction and establish regulations to reduce negative impacts.
	Strategy 2.2. Support the development of site-specific plans for key heritage resources and archaeological sites.
	Examples and/or potential actions – Provide management direction for access, compatible activities, restoration work and monitoring.
	Strategy 2.3. Assess existing compliance and enforcement tools for protecting heritage resources and archaeological sites.
	Examples and/or potential actions – Assess the adequacy of deterrents such as compensation for contravention of legislation.
	Strategy 2.4. Consider sites of special significance to First Nations in the development of a Marine Protected Areas network.
	Strategy 2.5. Identify measures to enhance the resilience of sensitive cultural areas.
	Examples and/or potential actions – Assess potential mitigations and enhancements. Create site management plans that, for example, mitigate the impacts of climate change and manage for human activities.
	Strategy 2.6. Expand the coordination and intensity of monitoring cultural resources and archaeological sites.

Heritage Sites and First Nations Cultural Areas	
Obj. 3.	**Protect heritage resources and archaeological sites by enhancing engagement with tenure proponents.**
	Strategy 3.1. Require the development of protocols between First Nations and proponents to guide human activities around sensitive cultural resources and archaeological sites.
	Examples and/or potential actions – Include community-based monitoring during surveys/excavation.
	Strategy 3.2. Enhance requirements for proponents to involve First Nations in archaeological and culturally sensitive site surveys in their territories.
	Examples and/or potential actions – Assess current requirements and identify appropriate changes.
	Strategy 3.3. Identify and protect culturally sensitive sites during tenure investigation and development by expanding archaeological survey requirements to include community-based research on nonphysical features.
	Examples and/or potential actions – First Nations communities will be given opportunity and funding to document any cultural sites that are not identified by an archaeological survey, such as sacred areas.
	Strategy 3.4. Require a First Nations cultural training component in the permitting, licensing, or tenuring of commercial tourism operators.
	Strategy 3.5. Explore models to fund site restoration and resilience, including user fees from tenure applicants who guide in areas that contain or are adjacent to heritage sites.
Obj. 4.	**Protect heritage resources and archaeological sites through public awareness.**
	Strategy 4.1. Develop and implement outreach and interpretive programs to improve awareness of local cultures and practices.
	Strategy 4.2. Support First Nations in developing interpretive signs that identify sensitive cultural areas, direct use of areas and provide cultural information.
	Strategy 4.3. Support the development of strategic cultural tourism planning that facilitates the protection of sensitive sites and areas.
	Examples and/or potential actions – Focus activity on resilient, public sites to direct use away from sensitive sites.
	Strategy 4.4. Establish camping or other marine recreation sites away from sensitive cultural and archaeological sites.
Obj. 5.	**Enhance the benefits and minimise and mitigate the negative impacts of archaeological, cultural and natural history research activities.**
	Strategy 5.1. Encourage the development of protocols between First Nations and researchers that identify local sensitivities and guide human activities around sensitive cultural resources and archaeological sites.
	Examples and/or potential actions – Develop and distribute templates.
	Strategy 5.2. Support and facilitate the development of First Nations research policies to direct and manage research in their territories.
	Examples and/or potential actions – Develop and distribute templates.
	Strategy 5.3. Encourage research partnerships and collaborations to facilitate archaeological and cultural research that has been prioritised by communities.
	Strategy 5.4. Work with other agencies and/or organisations to develop a joint provincial and First Nations registration system for cultural and archaeological research projects.
	Strategy 5.5. Require partnerships between proponents and First Nations for collaborative archaeological and culturally sensitive site surveys for proposed developments.
	Examples and/or potential actions – Assess current requirements and identify appropriate changes.

4.14 First Nations Resource Use and Management

The relationship of First Nations to their marine territories and resources is strong and a critical component of North Coast Aboriginal heritage. On the North Coast, First Nations societal structures and economic systems are intricately connected to marine resource abundance within territories. First Nations on the North Coast continue to govern, manage, enhance and sustainably use their territories and resources. Their hereditary governance systems control access to territories and direct the harvest of resources.

The citizens of the Haisla First Nation are born into one of five matrilineal clans, which are social groups that follow the mother's lineage. Each clan's territory is divided into watershed units called *wa'wais*, which can be translated as "stewardship areas." Each of the 61 *wa'wais* is held by a hereditary owner, who has inherited a Haisla name from their clan, and with it, the rights to the territory and its resources. The hereditary owner must protect and manage this territory. Some of the richest resource areas are *bagwaiyas*. A *bagwaiyas* is an area that is rich in one or more important resources, and use of this area is permitted to all members of the Haisla First Nation subject to governance protocols.

The Gitga'at, Gitxaala, Haisla, Kitselas, Kitsumkalum, and Metlakatla First Nations speak different dialects of Sm'algyax and have similar hereditary systems of governance. Members of these Nations are born into a ranked lineage, or *walp*, in one of four matrilineal clans. Each of these *walp*, or houses, is governed by a *Smgigyet*, who protects and enhances the house territory, manages resource use and organises productive labor and social and economic support. The members of the *walp* can harvest resources in their house territory; others must ask permission of the *Smgigyet* to access the territory.

First Nations on the North Coast continue to use their territories to feed, teach and heal their communities. Some households derive more than half of their diet from marine resources. Continued access to healthy populations of fish, shellfish, marine plants and other forms of nutrition are critical to the wellbeing of First Nations. Aboriginal title and aboriginal rights to harvest fish, shell fish and aquatic plants are recognized and affirmed in accordance with section 35(1) of the *Constitution Act, 1982*. First Nations harvesting these marine resources for food, social and ceremonial purposes take priority over commercial and recreational fishing but are subject to measures necessary for conservation and public safety. Under the *Park Act*, conservancies are expressly set aside for the preservation and maintenance of social, ceremonial and cultural uses of First Nations and in other parks and protected areas these uses have been or will be identified in protected area management plans.

Management direction for First Nations resource use and management in the North Coast plan area (Table 18) includes the protection of First Nations territories, Aboriginal rights and access to resources, and the protection of First Nations ability to govern through Aboriginal laws and practices. Direction is also given to improve opportunities for cultural education and provide support for community food security. Several areas have been identified for finer scale planning (see Strategy 1.3 and Figure 6). In these areas there are different views on what activities should take place, how the activities should be managed, and who should be involved in decisions making. Finer scale planning in the Nass Area (e.g., Stewart, Kitsault and Observatory Inlet) is subject to the participation of the Nisga'a Nation. These areas are discussed in more detail in Appendix 4.

Table 18. First Nations resource use and management—management objectives and strategies

First Nations Resource Use and Management	
Obj. 1.	**In accordance with section 35(1) of the *Constitution Act, 1982*, protect First Nations use of territories and resources for community benefit.**
	Strategy 1.1. Protect First Nations values by establishing a process for First Nations technical input into recommendations for a marine protected area network.
	Strategy 1.2. Identify First Nations use areas outside of a proposed marine protected area network that require protection through other management tools. *Examples and/or potential actions – Inventory use areas and conduct review of alternative protection management tools.*
	Strategy 1.3. Develop local-scale marine use plans in areas where important cultural components and First Nations values exist, as identified in Figure 6. *Examples and/or potential actions – Provide fine-scale tenuring recommendations through spatial zoning that reflect ecological and cultural values, while supporting marine-based planning and activities.*
	Strategy 1.4. Identify existing provincial tenures that overlap First Nations use areas and cultural sites, and develop strategies to minimise or mitigate impacts on First Nations practices. *Examples and/or potential actions – Develop general mitigation strategies for tenure types. Create site-specific management plans in collaboration with First Nations.*
	Strategy 1.5. Identify contaminated or damaged sites or areas of value to First Nations, and develop restoration plans. *Examples and/or potential actions – Inventory sites no longer under active tenure, and collaboratively develop restoration plans for prioritised contaminated or damaged sites.*
	Strategy 1.6. Work with the appropriate authorities to identify and protect habitats of species that are important to First Nations to conserve for future use. *Examples and/or potential actions – Focus on areas to be protected for future use that are not identified in Strategy 1.2. Information can be applied to, for example, Geographic Response Plans and restoration efforts.*
Obj. 2.	**Protect First Nations ability to govern, manage and enhance resources through Aboriginal laws and practices.**
	Strategy 2.1. Consistent with government to government agreements, develop collaborative governance structures that are compatible with, and integrate, Aboriginal governance structures and Aboriginal knowledge. *Examples and/or potential actions – Respect and involve hereditary tables in new governance structures.*
	Strategy 2.2. Identify mechanisms for integrating Aboriginal knowledge and resource management practices into provincial-level planning and regulation. *Examples and/or potential actions – Incorporate community-level decision-making at other levels.*
	Strategy 2.3. Support First Nations capacity for managing and responding to referrals. *Examples and/or potential actions – Identify First Nations capacity and funding needs, and develop mechanisms to enhance capacity as needed.*

First Nations Resource Use and Management	
Obj. 3.	**Enhance First Nations opportunities for cultural education.**
	Strategy 3.1. Support the expansion of First Nations cultural and environmental education programs through curriculum development.
	Examples and/or potential actions – Develop curriculum for public school districts and territory-specific curriculum for First Nations programming. Secure funding.
	Strategy 3.2. Support the enhancement of First Nations capacity for outdoor learning opportunities, such as Discovery Camps.
	Examples and/or potential actions – Collaborate with BC Parks on site facility development and interpretive programs. Identify ties to related initiatives that could provide opportunities for collaboration on program development. Secure funding.
Obj. 4.	**Enhance First Nations food security.**
	Strategy 4.1. Support community food security initiatives, such as apprenticeship programs.
	Examples and/or potential actions – Train young harvesters and enhance mentorship opportunities. Investigate ties to provincial and First Nations food security programs. Secure funding.
	Strategy 4.2. Identify opportunities for enhancing and restoring habitat associated with First Nations food resources.
	Examples and/or potential actions – Determine appropriate site-specific enhancement and/or restoration priorities and collaboratively develop restoration plans. Secure funding.
	Strategy 4.3. Collaboratively identify threats to First Nations food sources and develop mitigation strategies.
	Examples and/or potential actions – Inventory types of threats to First Nations food sources, including cumulative effects. Assess mitigation options.
	Strategy 4.4. Protect the variety and quantity of marine resources for First Nations use.
	Examples and/or potential actions – Protect habitats that support a wide diversity of fish and invertebrate species at various life stages. Protect habitats near First Nations communities to ensure access to marine species that are important for food security.

Photo by Birgitte Bartlett

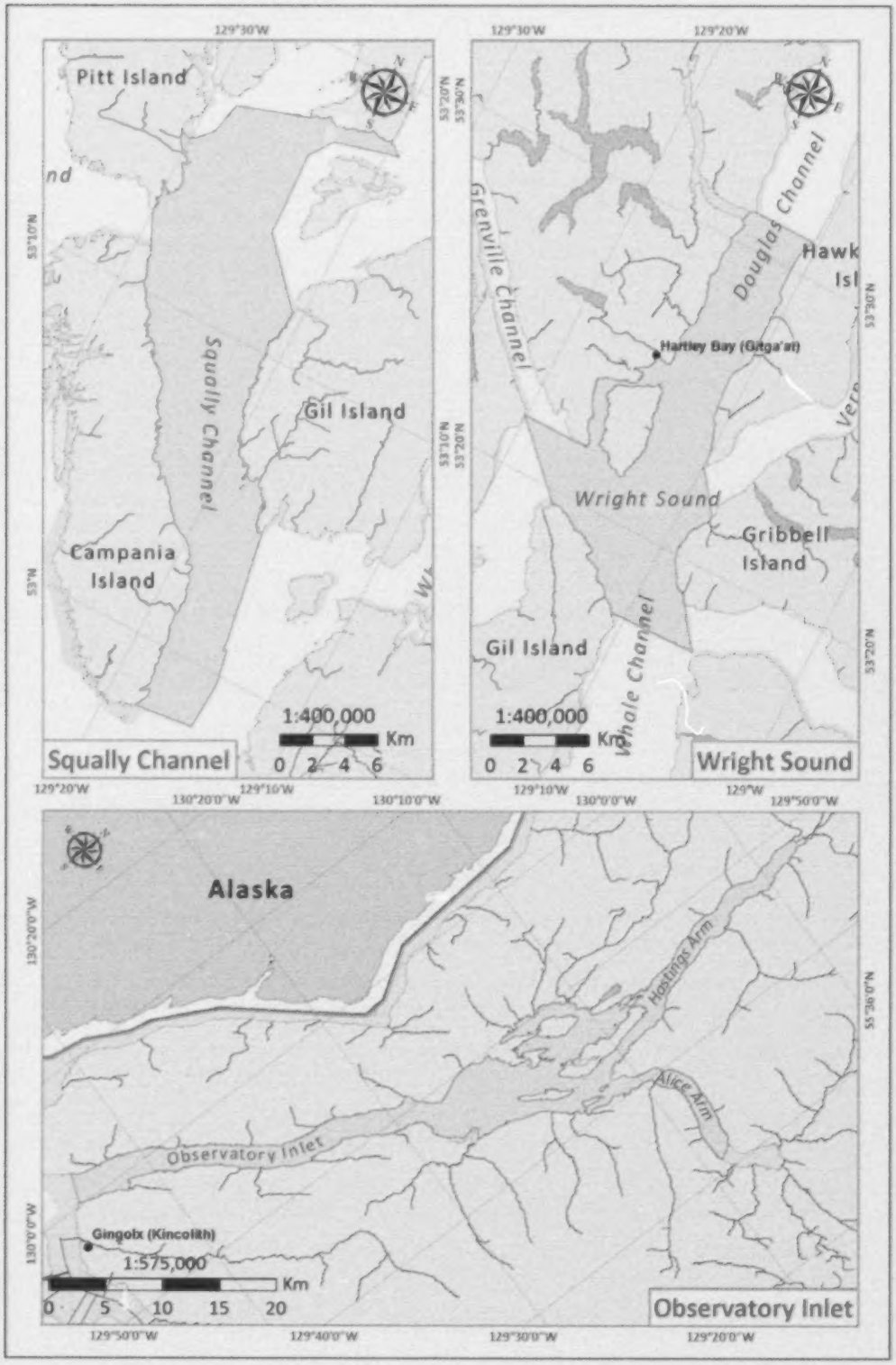


Figure 6. North Coast areas identified in Chapter 4.14, Strategy 1.3 for local-scale marine planning

CHAPTER 5: MARINE SPATIAL PLAN

Photo by Erin Mutrie

This chapter describes the process used to develop recommendations for spatial zoning, including both Special Management Zones and Protection Management Zones, as part of the North Coast MaPP marine planning process. Also presented are recommended zone types, area maps, evaluation criteria and rationale for the selection of polygons within the North Coast plan area.

Spatial planning and the zoning of marine space was based on the MaPP Zoning Framework, which is consistently applied across all four MaPP planning sub-regions. Spatial planning in the North Coast plan area followed the steps outlined below.

Step 1: Confirmation of Zoning Approach

- Agreement on a Regional Zoning Framework that confirmed MaPP principles for establishing zones, described zoning scale, listed zoning objectives and described zone designations (General Management Zones, Special Management Zones and Protection Management Zones)
- Agreement on the types of Special Management Zone categories and Protection Management Zone categories that would be designated in the North Coast plan area
- Development of Recommended Uses and Activities Tables for each type of zone and zone category

Step 2: Compilation and Analysis of Spatial Data

- Data collection and verification
- Identification of primary data layers to be used in spatial planning
- Spatial data overlay analysis to identify conflicts and areas of high value for particular uses and activities

Step 3: Development of Decision-Support Tools

- Creation of a MaPP web-mapping portal to display, evaluate and overlay spatial data
- Development of a compatibility matrix to assess the compatibility of two different human uses or activities that are occurring at the same time and location
- Development of a vulnerability matrix to provide information on the vulnerability of marine ecosystems to particular marine stressors
- Creation of maps and reports on ecosystem vulnerability to climate change
- Creation of maps and reports on ecosystem vulnerability to pollution
- Creation of sub-regional and regional Marxan scenarios to identify spatial areas with high conservation value

Step 4: Development of Preliminary Spatial Plan

- Joint workshops held between First Nations and the Province to develop zone placement
- Refinement of zone-specific Recommended Uses and Activities Tables and management provisions/ conditions for zones and zone categories

Step 5: Review and Finalisation of Spatial Plan

- Draft zones uploaded to MaPP web-mapping portal and made accessible to MPAC

- Considera ion of MPAC member advice by First Nations and provincial technical staff
- First Nations and provincial internal review of zones and Recommended Uses and Activities Tables to ensure alignment with First Nations and provincial direction
- Zones and Recommended Uses and Activities Tables revised and incorporated into the draft North Coast Marine Plan
- Revised draft zones made accessible to the general public on the MaPP web-mapping portal during the public review period

The designation of marine space into discrete zones is a common component of integrated ocean and marine planning. This practice is consistent with strategic land use planning in BC, which allocates space to specific zones to alleviate competition and conflict and/or identify priority uses and values.

5.1 Zone Descriptions

As part of the North Coast MaPP marine planning process, the North Coast–Skeena First Nations Stewardship Society member and partner Nations and the Province of British Columbia have developed recommendations for three overarching zones based on the MaPP Zoning Framework: a General Management Zone, Special Management Zones and Protection Management Zones.

General Management Zone

Description: The General Management Zone (GMZ) allocates space for a wide range of marine uses and activities that are governed or managed using an EBM framework. The GMZ recognises that many coastal or marine areas have no overarching priorities for uses or activities, and that a large number of activities do not have spatial or temporal conflicts. Where conflicts may occur, they can be addressed through proper management prescriptions in combination with the general management direction (i.e., objectives and strategies) of the sub-regional marine plans including prohibitions and exceptions for activities that occur on the seabed, pelagic, or surface areas.

The GMZ contains areas with a variety of dispersed uses and activities that are associated with public, private and community uses. The areas are sufficiently large that most uses and activities can co-exist in space and over time.

First Nations uses continue in the GMZ, in accordance with Aboriginal rights, legal obligations and government policies. The general management direction objectives and strategies outlined in Chapters 3 and 4 of this plan provide additional management direction for the GMZ.

Objective: To manage for a variety of present and potential future marine uses and activities that adhere to ecosystem-based management principles; multiple uses and activities are permitted where compatible in time and space.

Special Management Zone

Description: The Special Management Zone (SMZ) allocates space for high priority and/or high potential sustainable marine uses and activities, including economic development and/or cultural uses and activities that require specific environmental conditions or locations. To avoid temporal or spatial conflicts and competition with certain other uses and activities, special management prescriptions are applied in addition to the general management direction (i.e., general objectives and strategies) of the plan.

Aboriginal uses, including practices for food, social and ceremonial purposes, continue in the SMZ in accordance with legal obligations and government policies.

Objective: To manage for one or more identified high priority and/or high potential sustainable marine uses or activities. Additional uses and activities are permitted only where they are compatible in time and space with the high priority and/or high potential use or activity.

Special Management Zones

a. Special Management Zone: Shellfish Aquaculture

The management intent places an emphasis on the growth and development of the shellfish aquaculture industry. Aboriginal uses and practices, including for food, social and ceremonial purposes continue throughout this SMZ.

b. Special Management Zone: Tourism and Recreation

The management intent places an emphasis on ecosystem-based tourism and recreation activities and uses. Maintaining visual quality and ecotourism opportunities is the primary objective. Significant public marine recreational use and activity occurs in this SMZ, including anchorages, kayaking and boating routes, whale watching and bear viewing. Aboriginal uses and practices, including for food, social and ceremonial purposes continue throughout this SMZ.

c. Special Management Zone: Renewable Energy

The management intent places an emphasis on the growth and development of the renewable energy industry. Aboriginal uses and practices, including for food, social and ceremonial purposes continue throughout this SMZ.

d. Special Management Zone: Cultural

Cultural SMZs are areas of high value to First Nations, on a seasonal and year-round basis, for cultural value protection, Aboriginal economic development opportunities, and food security. Aboriginal uses and practices, including for food, social and ceremonial purposes continue throughout this SMZ.

The management intent places an emphasis on continued First Nations use of marine resources and access to cultural resources and activities, especially those for spiritual, social, food and fibre harvest, and educational and ceremonial purposes. Other activities may be acceptable if they do not negatively impact food security or damage or alter cultural resources or ecological systems. Uses and activities in SMZ Cultural should strengthen, encourage and/or maintain First Nations cultural resources and economic opportunities.

Protection Management Zone

Description: The Protection Management Zone allocates space primarily for conservation purposes or objectives, and may provide a basis for protecting localised conservation values. The Protection Management Zones (PMZs) recommended in this marine plan are not designated marine protected areas (MPAs) and do not provide recommendations on marine uses and activities outside of provincial regulatory authority.

PMZs will make important contributions to the Canada-BC-First Nations MPA network planning process for the Northern Shelf Bioregion and are subject to further consultation and evaluation through that process.

Objective: To conserve and/or protect the range of values that marine environments provide with a primary emphasis on maintaining marine biodiversity, ecological representation and special features (e.g., pinniped haulout sites or rookeries, and significant foraging grounds for species).

A number of marine areas within the North Coast plan area are protected by provincial legislation including Ecological Reserves and Class A parks and Conservancies, where use and/or protection measures are guided by legislation and park management plans. If Protection Management Zones (PMZs) are located adjacent to existing provincial protected areas, the management direction in this plan would apply to the marine components of the protected areas if management plans for those areas are either in draft form or do not exist.

All spatial recommendations in this marine plan provide policy guidance intended to inform the decision making process regarding uses and activities in the areas identified. The appropriate policy and legal instruments for achieving stated PMZ objectives will be determined during plan implementation. In the interim, or in the absence of legal designation, the PMZ Recommended Uses and Activities Tables provide guidance to provincial and First Nations resource staff on tenuring decisions for proposed activities.

Protection Management Zone Categories

To achieve protection of marine values while still providing for sustainable economic opportunities, a range of management objectives are recommended and expressed through use of the International Union for Conservation of Nature (IUCN) Protected Area Management Categories. The IUCN categories were used to:

- provide a consistent, internationally recognized approach to expressing the range of management approaches required to conserve a diversity of marine values;
- assist planners and stakeholders in providing recommendations for how uses and activities under provincial and First Nation management/authority should be managed to conserve a range of values in locally specific circumstances; and,
- assist planners in assessing the implications of the PMZ recommendations in a consistent and comprehensive manner.

Interpretation of the IUCN categories in the PMZ description tables and zoning maps does not imply management direction for marine uses and activities outside of provincial regulatory authority. Additionally, the identification of PMZs and the use of IUCN categories are not intended to predetermine the outcome of other related planning processes and should not be interpreted as such. PMZs will make important contributions to the MPA network planning process for the Northern Shelf Bioregion, and are subject to further consultation and evaluation through that process.

Not all of the IUCN categories are used in the North Coast Marine Plan. The categories that are used in the North Coast Marine Pan are described below. For a complete description of all IUCN categories, refer to Appendix 5: Descriptions of IUCN Categories.

Category Ib - usually large unmodified or slightly modified areas, retaining their natural character and influence, without permanent or significant human habitation, which are protected and managed so as to preserve their natural condition.

Category II - large natural or near natural areas set aside to protect large-scale ecological processes, along with the complement of species and ecosystems characteristics of the area, which also provide a foundation for environmentally and culturally compatible spiritual, scientific, educational, recreational and visitor opportunities.

Category IV - aim to protect particular species or habitats and management reflects this priority. Many category IV protected areas will need regular, active interventions to address the requirements of particular species or to maintain habitats, but this is not a requirement of the category.

5.2 Boundary Delineation and Evaluation Criteria

The North Coast Technical Team considered various factors when determining proposed zoning boundaries (Table 19).

Table 19. Evaluation criteria for boundary delineation and zone types

Factor	Application
Existing designations	Area boundaries considered existing designations to maximise compatibility between proposed zones and existing terrestrial and marine designations. *Examples - BC Ecological Reserves Conservancies, Rockfish Conservation Areas, Sponge Reef Areas of Interest*
Ecological values	Area boundaries were delineated to capture ecological values and specific ecological features of interest. *Examples - eelgrass and kelp beds, consistent herring spawning areas, estuaries, areas with a high abundance of coral and sponge, bird colonies*
Cultural and Aboriginal use values	Area boundaries were delineated to capture important cultural and Aboriginal use areas that require spatial protection. Cultural and Aboriginal use data is both spatial and non-spatial. *Examples - sensitive locations, including those of cultural and spiritual importance, important food gathering areas, village sites*
Current uses and activities	Area boundaries were drawn to minimise conflict and ensure continued economic opportunities in the region based on the evaluation of current uses and activities.
Future economic opportunities	Area boundaries were delineated to facilitate future economic opportunities in the region based on the evaluation of potential future uses and activities. *Examples - future frequency of use for log handling, high value sites for marine-based renewable energy, shellfish aquaculture capability, and tourism and recreation opportunity*
Adjacent land use	Area boundaries considered adjacent land use to maximise compatibility between proposed zones and terrestrial areas. *Examples - private land, existing terrestrial tenures, parks and protected areas*

Factor	Application
Results of Marxan analyses	Area boundaries were delineated based on results from sub-regional Marxan analyses that used spatial data sets compiled by the British Columbia Marine Conservation Analysis to identify areas of high conservation value and representative areas of biodiversity.
Buffer zones	Areas of lower restriction surrounding core areas of higher restriction were applied in some instances to provide additional protection while still allowing some activities to occur.
Ease of identification, navigation and management	Area boundaries were designed for easy identification, to facilitate navigation on the water, and for compliance and enforcement purposes. *Examples - straight lines, jaws of land (boundary established between two visible terrestrial points)*

5.3 Recommended Uses and Activities within Zones

Recommendations are made for a set of marine uses and activities in the North Coast plan area. The uses and activities are consistent throughout the MaPP study area; activities are defined in Appendix 1.

The Recommended Uses and Activities Tables identify the Acceptable (✓), Conditionally Acceptable (O), or Not Acceptable (X) uses and activities for a particular zone (Table 20). The identification of an activity as acceptable, conditionally acceptable or not acceptable, does not alter the Province of British Columbia and First Nations referral obligations under existing agreements or determine the need for or level of engagement under existing agreements. Conditionally Acceptable activities have specific management conditions that can be found below the Recommended Uses and Activities Table for each zone. Some conditional statements refer to management plans that will be developed in the future. Until management plans are developed, conditional activities should consider local values and meet existing legislation, regulation and/or policy requirements including Province of BC and First Nations' referral obligations. Management plans, once developed, may outline additional requirements. A complete list of conditional statements used in North Coast spatial planning is available in Appendix 3.

Table 20. Recommended uses and activities acceptability statements

Recommended Uses and Activities Categories	
Uses and activities are considered to be 'acceptable' subject to applicable laws, policy and relevant agreements. Acceptability of any use/activity does not guarantee that a use/activity will be approved.	✓
Uses and activities are considered to be 'conditionally acceptable' subject to applicable laws, policy and relevant agreements, and provided they are consistent with (adhere to) the plan conditions. Conditional acceptability of any use/activity does not guarantee that a use/activity will be approved.	O
Uses and activities are considered to be 'not acceptable' and should not be approved.	X

5.4 North Coast Zoning Summary

Within the North Coast plan area, there are 31 PMZs and 27 SMZs. Table 21 provides a summary of the zones by type, area and length of shoreline.

Table 21. Summary of zones by type, area and length of shoreline

Zone	IUCN Category/ Type	No. of Zones	Total Area (km^2)	Percent of North Coast Plan Area	Shoreline length (km^2)	Percent of North Coast Shoreline
Protection Management Zone (PMZ)	IUCN Ib	4	144.04	0.68	306.54	3.41
	IUCN II	7	674.31	3.20	174.81	1.94
	IUCN IV	20	1,870.44	8.88	1,719.66	19.21
Total PMZ		**31**	**2,688.80**	**12.76**	**2,201.00**	**24.48**
Special Management Zone (SMZ)	Shellfish Aquaculture	7	78.61	0.37	123.17	1.37
	Cultural	5	35.39	0.17	147.93	1.65
	Renewable Energy	6	534.94	2.54	32.56	0.36
	Tourism & Recreation	9	369.39	1.75	356.98	3.97
Total SMZ		**27**	**1018.34**	**4.83**	**660.64**	**7.35**
General Management Zone (GMZ)		n/a	16,499.11	78.29	3,911.77	43.50
NORTH COAST PLAN ZONING[a]		**58**	**20,206.25**	**95.89**	**6,773.41**	**75.32**
Central Coast Zoning[a]		5	289.39	1.37	240.71	2.68
Existing protected areas[b]			578.26	2.74	1,978.15	22.00
TOTAL			**21,073.90**	**100.00**	**8,992.27**	**100.00**

[a] Those parts of Central Coast SMZs (1) and PMZs (3), (4), and (9) that are located in the area where the Central Coast plan area and the North Coast plan area overlap are included. Note: Central Coast PMZ (5) has complete overlap with PMZ-32, and SMZ (1) has a partial overlap; the overlap areas are not included in calculations.

[b] Legally designated protected areas include Ecological Reserves, Conservancies, Provincial Parks, and Protected Areas (see Figure 4). Note: protected areas that overlap zoning are not included in calculations.

[a] Zoning does not direct uses or activities outside of provincial regulatory authority.

Zoning Summary Maps

The three zone types (General Management Zone, Special Management Zone, Protection Management Zone) identified through the North Coast planning process are shown in Figure 7.

Figure 8 shows the delineation of the Protection Management Zones into high (IUCN Ib, II) and medium (IUCN IV) protection levels.

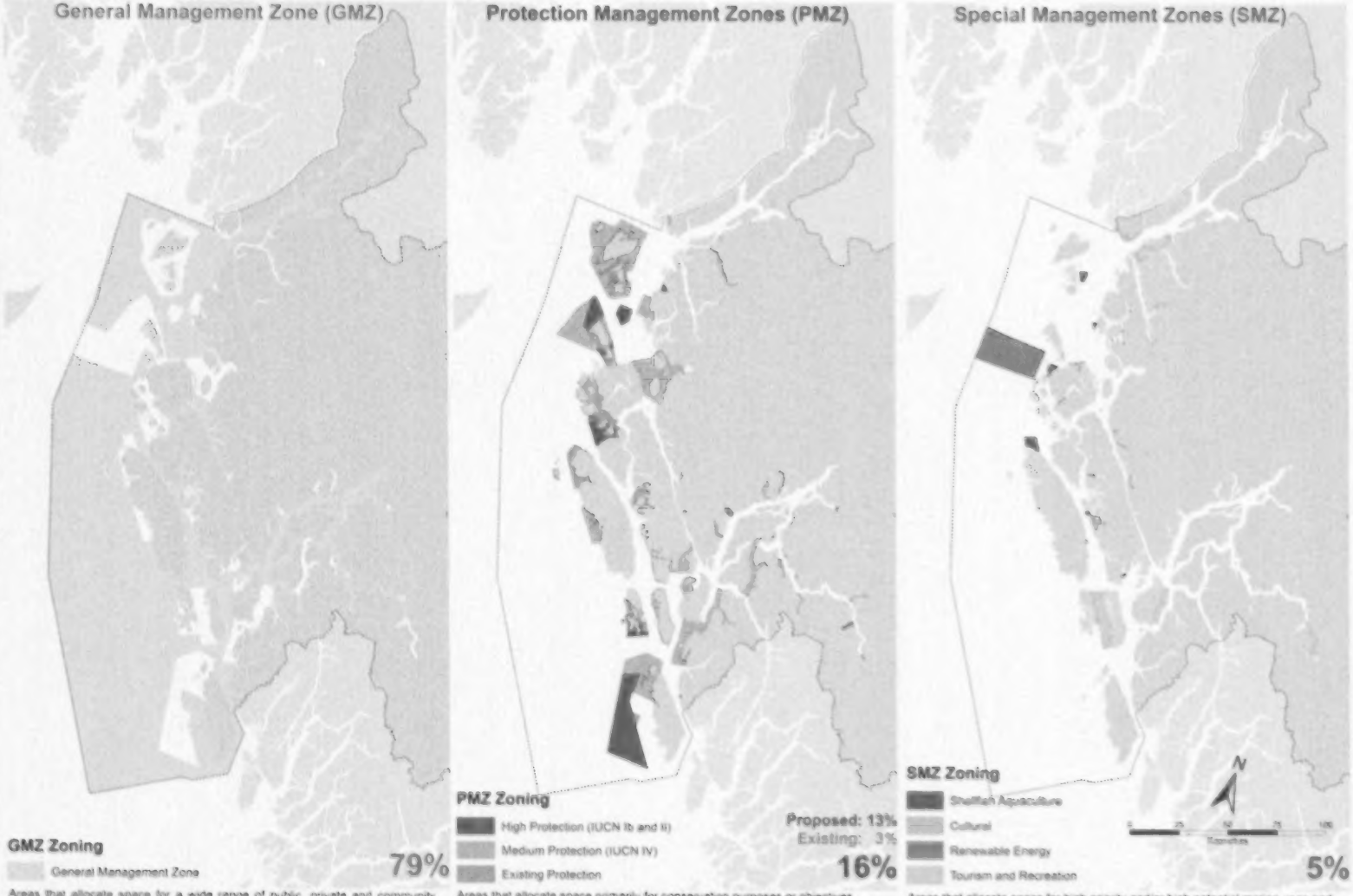
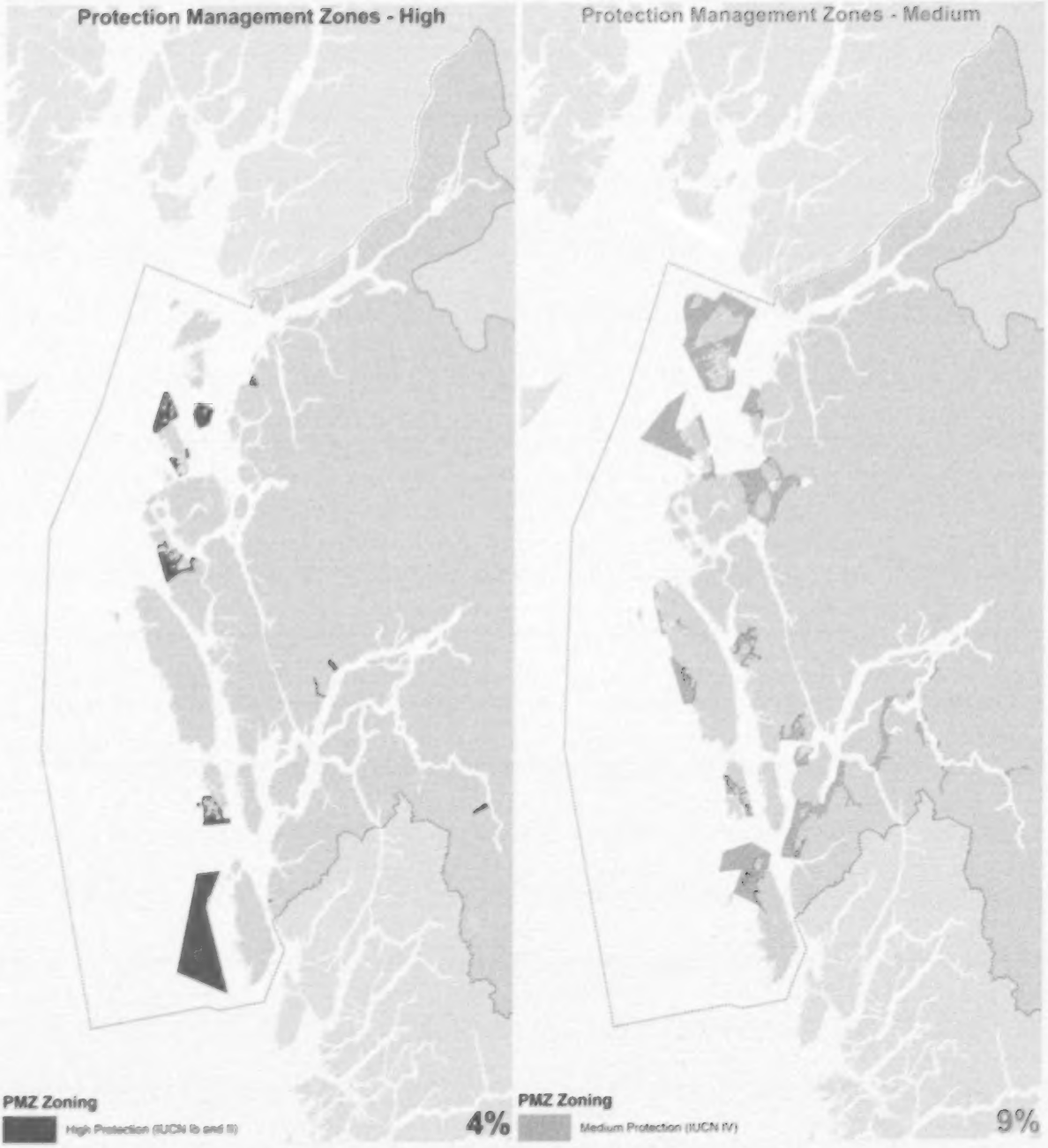

General Management Zone (GMZ)
Protection Management Zones (PMZ)
Special Management Zones (SMZ)
GMZ Zoning
General Management Zone
79%
Areas that allocate space for a wide range of public, private and community marine uses and activities that are governed or managed using an Ecosystem Based Management (EBM) framework.
PMZ Zoning
High Protection (IUCN Ib and II)
Medium Protection (IUCN IV)
Existing Protection
Proposed: 13%
Existing: 3%
16%
Areas that allocate space primarily for conservation purposes or objectives. The NC Marine Plan includes two levels of conservation focus for these zones:
High Protection: areas of highest conservation value with an emphasis on protecting marine species, ecosystems and ecological processes in their natural state, and
Medium Protection: areas primarily identified to protect particular species or habitats.
Existing protection includes legally designated protected areas (Ecological Reserves, Conservancies, Provincial Parks, and Protected Areas)
SMZ Zoning
Shellfish Aquaculture
Cultural
Renewable Energy
Tourism and Recreation
5%
Areas that allocate space for high priority and/or high potential marine uses and activities that require specific environmental conditions or locations.
N

Figure 7. North Coast zoning summary map

Zoning does not direct uses or activities outside of provincial regulatory authority.



Areas of highest conservation value with an emphasis on protecting marine species, ecosystems and ecological processes in their natural state. These areas have significant ecological values, including rare or threatened species or ecosystems. They may also represent marine ecosystem types.

Limited activities can occur in these areas provided they do not impact the conservation objectives of each zone.

Areas identified primarily to protect particular species or habitats.

A range of extractive and non-extractive activities can occur provided they do not impact the conservation objectives for each zone.

Zoning does not direct uses or activities outside of provincial regulatory authority.

Figure 8. Protection Management Zones: high and medium

5.5 Spatial Zoning by Geographic Area

North Coast marine space has been divided into five geographic areas in order to better display the proposed management zones (Figure 9).

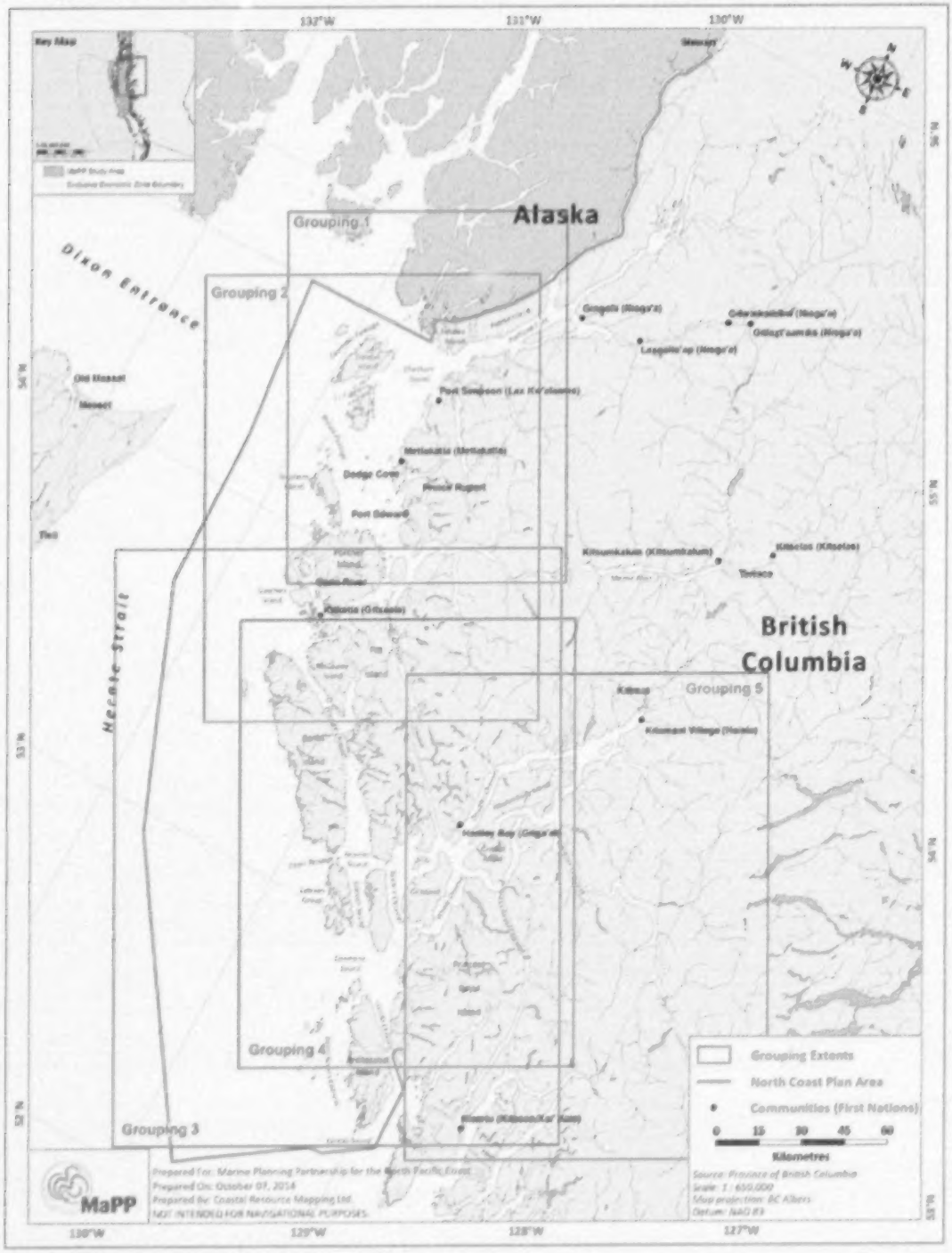


Figure 9. Index map of spatial plan area groups

North Coast Spatial Planning: Group 1

Figure 10 shows the area and zone delineation for North Coast spatial planning Group 1.

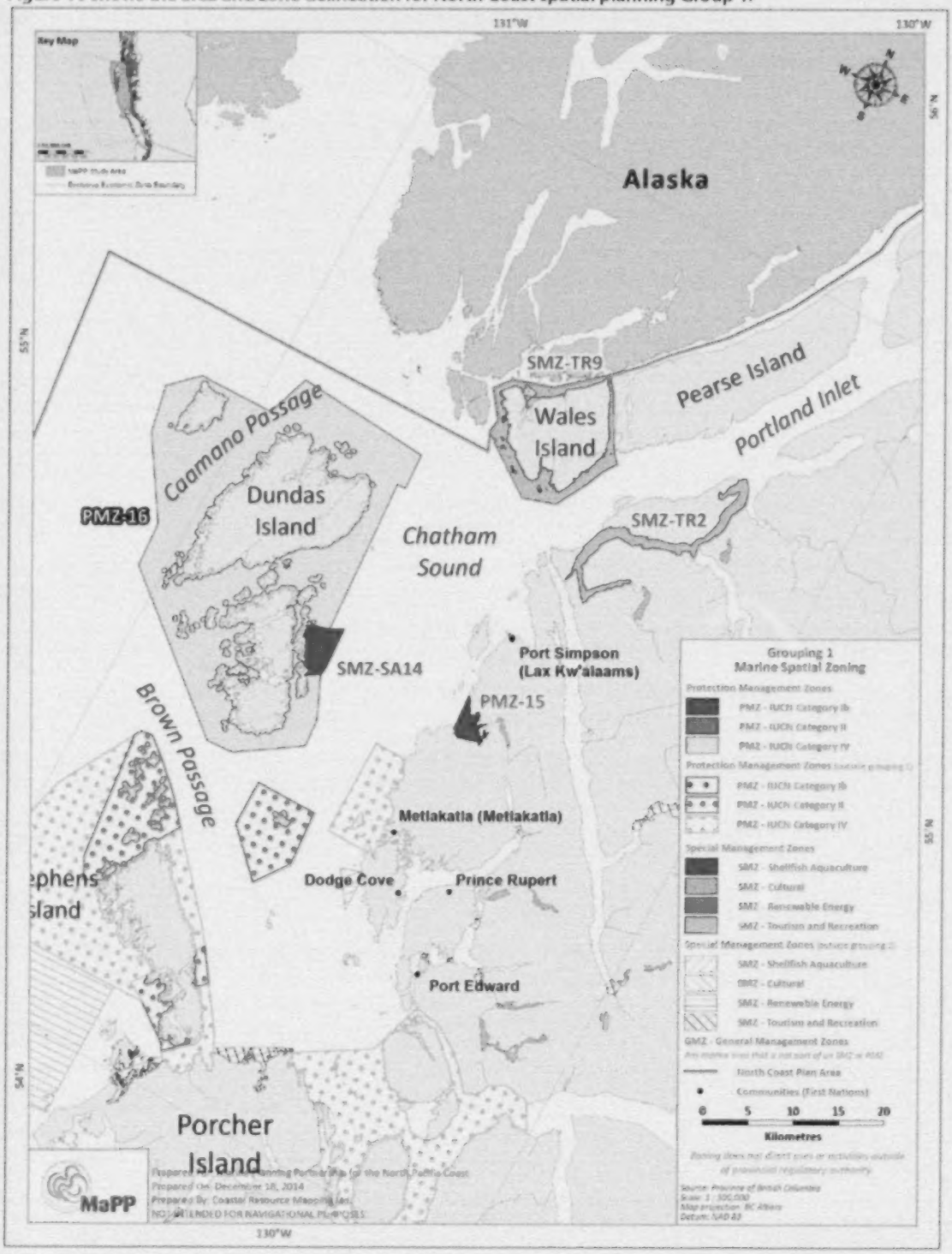


Figure 10. North Coast Group 1 map

Group 1 includes the PMZs listed in Table 22 and the SMZs listed in Table 23. Table 24 lists the Recommended Uses and Activities for Group 1.

Table 22. Group 1 Protection Management Zone

Note: Zoning does not direct uses or activities outside of provincial regulatory authority.	
PMZ	**Description**
15 - Big Bay	**Purpose**: To retain the natural diversity and abundance of marine life, and the structure, function and integrity of the area. To protect marine biodiversity and culturally important habitats and species. **IUCN Category**: Ib **Size**: 8.2 km^2 **Description**: Big Bay is an estuary of provincial and national significance to breeding, migrating and wintering waterfowl. The estuary was ranked as having the highest biological importance score in the MaPP study area by the Pacific Estuary Conservation Program (PECP). The area is ranked 'very high' for waterfowl, waterbird Species at Risk, and eulachon, herring and shellfish. Waterbird species recorded during spring migration include hundreds of thousands of Surf Scoter (blue-listed), thousands of gulls and shorebirds, hundreds of Trumpeter and Tundra Swans, Snow Geese and Brant Geese. One of the largest herring spawning occurrences on the coast takes place in Big Bay. The estuarine habitat and many of the fish, shellfish, and waterfowl species that live there have cultural significance for First Nations. The Tsimpsean Indian Reserve surrounds Big Bay. There are three RAAD identified archaeological sites, and a historic ruin from Georgetown Mills, a water-powered sawmill, on private property at the mouth of Georgetown Creek.
16 - Dundas Island	**Purpose**: To conserve areas of high cultural and/or historical value, including areas of habitation and marine harvesting. To protect ecological values, including areas for formative stages of a species lifecycle. To protect unique and or remote wilderness experiences for tourism and/or recreational purposes. **IUCN Category**: IV **Size**: 470.2 km^2 **Description**: This PMZ surrounds the Lax Kwaxl/Dundas and Melville Islands Conservancy. The area has documented evidence of 11,000 years of Aboriginal use and occupation and has high cultural significance. First Nations values and uses of the area include harvesting for salmon, herring, groundfish, clams, cockles, and other intertidal resources. The island contains campsites, some of historical importance, and many still in use by First Nations for seasonal harvesting of marine and land resources. The area is a popular destination for tourism and recreation, and offers a unique and remote wilderness experience. There is one Indian Reserve (IR) on the Island. The PMZ overlaps a Rockfish Conservation Area.

Table 23. Group 1 Special Management Zones

Note: Zoning does not direct uses or activities outside of provincial regulatory authority.		
SMZ	**Type**	**Purpose, Size**
SA-14 Dunira Island	Shellfish Aquaculture	**Purpose:** Allocation of space and maintenance of ecological conditions for sustainable shellfish aquaculture activities in an area with appropriate oceanographic characteristics. **Size:** 15.9 km^2
TR-2 Somerville Island	Tourism/ Recreation	**Purpose**: Allocation of space and maintenance of ecological conditions to support compatible tourism and recreation activities in an area adjacent to an existing land-based conservancy. **Size:** 32.3 km^2
TR-9 Wales Island	Tourism/ Recreation	**Purpose**: Allocation of space and maintenance of ecological conditions to support compatible tourism and recreation activities in an area adjacent to an existing land-based conservancy. **Size:** 48.2 km^2

Photo by Colin Nelson

Table 24. Group 1 Recommended Uses and Activities Table

Category	Marine Uses and Activities	General Management Zone	PMZ-15 Big Bar	PMZ-16 Dundas Island	Shellfish Aquaculture SMZ	Tourism Recreation SMZ
	Site Name / Zone Type	GMZ	PMZ**	PMZ**	SMZ	SMZ
Aquaculture	Bottom Aquaculture Siting – Marine Plants, Shellfish, Other Invertebrates	✓	X	O[2,4,5]	✓	O[12,16]
	Off-Bottom Aquaculture Siting – Marine Plants, Shellfish, Other invertebrates	✓	X	O[2,4,5]	✓	O[12,16]
	Off-Bottom Aquaculture Siting – Finfish	X	X	X	X	X
Energy	Renewable Energy Generation	✓	X	O[2,4,5]	O[12]	O[12,16]
Industry	Forestry Operations – Log Handling and Storage	✓	X	O[10]	O[12]	O[10,17]
	Forestry Operations – Helicopter Log Drop Sites	✓	X	✓	O[12]	O[10,17]
	Mining Operations	X	X	X	X	X
Infrastructure	Commercial and Recreational Anchorages*	✓	X	O[2,4,5]	O[12,15]	✓
	Float Homes	✓	X	X	X	✓
	Floating Lodges	✓	X	O[2,4,5]	X	✓
	Level 1 Docks, Wharves & Facilities	✓	O[2,3]	O[2,3,4,5]	O[12]	✓
	Level 2 Docks, Wharves & Facilities	✓	X	X	X	O[12,16]
Recreation/ Tourism	Commercial Recreation and Tourism	✓	O[2]	✓	O[12,15]	✓
	Public Recreation and Tourism	✓	O[2]	✓	O[12,15]	✓
Research	Research	✓	O[1]	✓	✓	✓
Utilities	Linear Utilities	✓	O[2]	O[2,4,5]	O[12,15]	O[12,16]
	Point Source Utilities	✓	X	X	X	O[12,16]

** Where a use/activity is outside provincial regulatory authority, the approval of that use/activity is subject to the decision-making process(es) of the responsible authorities. Absence does not imply that the use/activity was not considered or evaluated or is of no interest. The reader should contact the appropriate management authority(ies) for direction on uses/activities in such circumstances. Zoning does not direct uses or activities outside of provincial regulatory authority.

* Anchorage restrictions do not apply to commercial towboat reserves and provincially designated boat havens, nor do they apply to vessels in distress or other emergency situations.

Key:

Aboriginal uses, including practices for food, social and ceremonial purposes, continue in accordance with legal obligations.

Uses and activities are considered to be 'acceptable' subject to applicable laws, policy and relevant agreements. Acceptability of any use/activity does not guarantee that a use/activity will be approved.	✓
Uses and activities are considered to be 'conditionally acceptable' subject to applicable laws, policy and relevant agreements, and provided they are consistent with (adhere to) the plan conditions. Conditional acceptability of any use/activity does not guarantee that a use/activity will be approved.	O
Uses and activities are considered to be 'not acceptable' and should not be approved.	X

Note: This table does not alter the Province of British Columbia and First Nations referral obligations under existing agreements.

List of Conditional Statements—Group 1

- O[1]: only research activities that are non extractive and will not disturb sensitive or critical features and habitat are acceptable.
- O[2]: should avoid disturbance of sensitive or critical features and habitat; site limitations to be identified in an approved management plan.

- O[3]: infrastructure enabling First Nations access to adjacent reserve lands is permitted.
- O[4]: activity should be compatible with First Nations cultural use of area; site limitations to be identified in an approved management plan.
- O[5]: infrastructure and associated activities should be compatible with the purpose, vision and/or conservation objectives of protected areas; site limitations to be identified in an approved management plan.
- O[10]: adherence to established Best Management Practices for the purposes of protecting and managing ecological features and habitats.
- O[12]: requires thorough consultation and statement of compatibility in siting and activity with priority tenure type holders or interested parties (associations/user groups).
- O[15]: tenure proposal documentation and/or other forms of communication should clearly identify the priority activity of the zone.
- O[16]: tenure or activity should be sited and operated in such a way to minimise impact on sensitive marine species and habitats by following established Best Management Practices for the protection of these values.
- O[17]: requires thorough consultation and statement of compatibility in siting and activity with priority tenure type holders or interested parties (associations/user groups) when operations occur during the months of May to September.

* Some conditional statements refer to management plans that will be developed in the future. Until management plans are developed, conditional activities should consider local values and meet existing legislation, regulation and/or policy requirements including Province of BC and First Nations' referral obligations. Management plans, once developed, may outline additional requirements.

North Coast Spatial Planning: Group 2

Figure 11 shows the area and zone delineation for North Coast spatial planning Group 2.

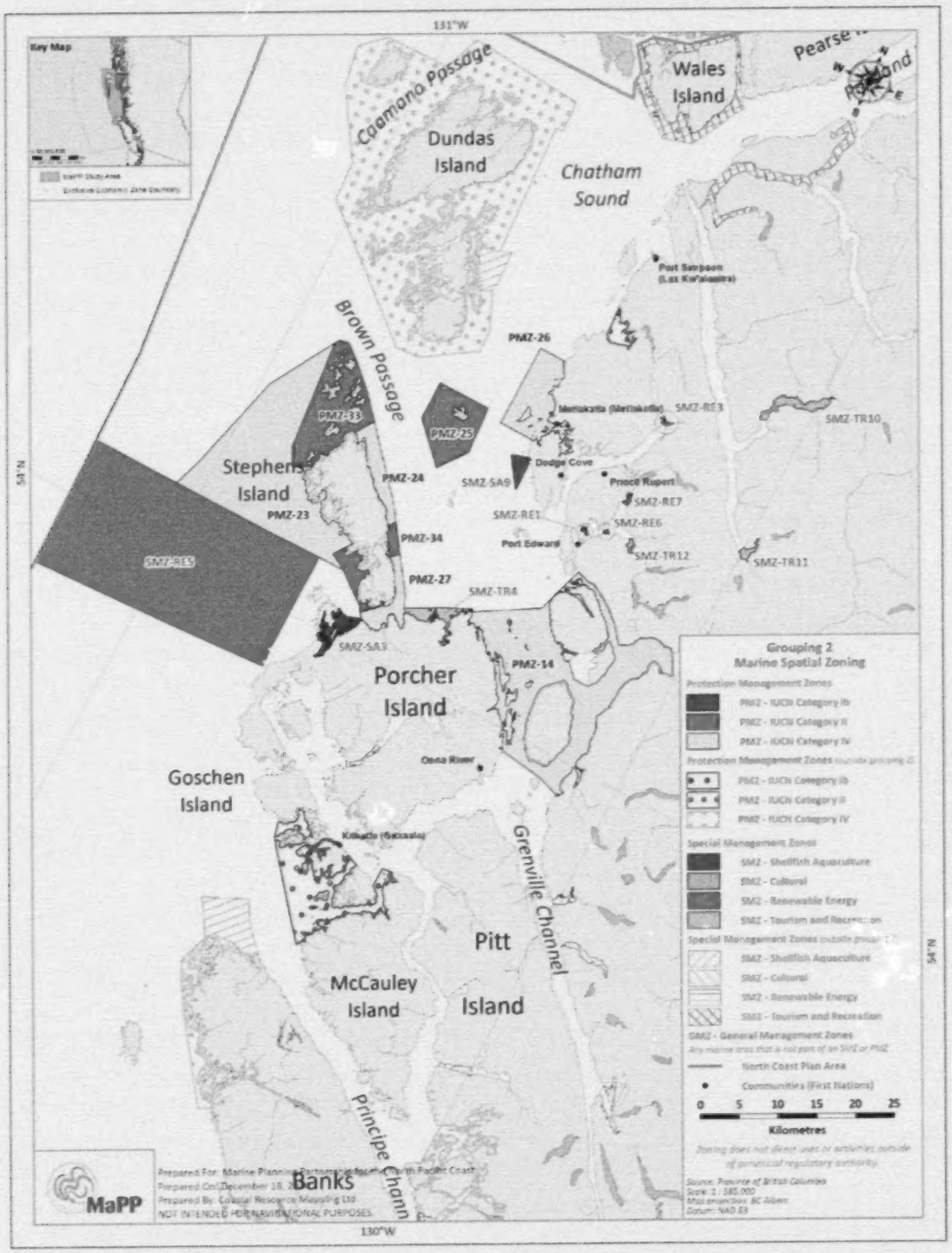


Figure 11. North Coast Group 2 map

Group 2 includes the PMZs listed in Table 25 and the SMZs listed in Table 26. Table 27 lists the Recommended Uses and Activities for Grouping 2.

Table 25. Group 2 Protection Management Zones

Note: Zoning does not direct uses or activities outside of provincial regulatory authority.	
PMZ	**Description**
33 - Tree Knob Group	**Purpose:** To protect areas of high cultural and historical value, including areas of habitation and marine harvesting. **IUCN Category:** II **Size:** 76.7 km^2 **Description:** The Tree Knob Group has long been used by First Nations for food and ceremonial purposes. The islands are important intertidal harvesting areas for many species including clams, cockles, crabs, and marine plants. The area historically served as a staging area for offshore harvest and has been home to harvest camps. The terrestrial portions of these islands are important for marine mammal and bird nesting habitat, while the shallow waters around them support diverse marine plants and animals. Marine mammals that use the area include killer whales, humpback whales, stellar sea lions, Pacific white-sided dolphins, harbour seals, and porpoises. Waterfowl, eagles, and spawning salmon are found in the area. Scuba diving at the Tree Nob Group is excellent due to the high marine species diversity and large underwater reefs. This PMZ covers the marine component of the northern tip of the Ksgaxl/Stephens Islands Conservancy. Nine recognized archaeological sites and at least seven named First Nation village sites are within the conservancy.
34 - Stephens Passage/ Arthur Island	**Purpose:** To protect areas of high cultural and historical value, including areas of habitation and marine harvesting. **IUCN Category:** II **Size:** 18.8 km^2 **Description:** Located on the East side of Stephens Island, this area protects intertidal habitat and archaeological sites in an ancient and contemporary First Nations harvest area. The PMZ borders on the Ksgaxl/Stephens Islands Conservancy, which contains high marine and terrestrial values including habitat for numerous bird, marine mammal and marine invertebrate species. The terrestrial and marine ecosystems are healthy and productive. Wilderness-based recreation opportunities in the area include kayaking, scuba diving and wildlife viewing.

Photo by Allan Bolton

PMZ	Description
25 - Lucy Island	**Purpose:** To protect important feeding, breeding, molting, wintering, or resting sites, and to protect areas of high cultural, historical and recreational value, including areas important for marine harvesting. **IUCN Category:** II **Size:** 53.1 km² **Description:** This PMZ surrounds the Lucy Islands Conservancy, a small island with unique cultural and natural values. The Island is a globally significant breeding and nesting area for a variety of seabirds, including the rhinoceros auklet. There are approximately 26,000 nesting pairs recorded, representing about 5% of the global population. Humpback whales, killer whales, Dall's porpoises, Pacific white-sided dolphins, sea lions and harbour seals can be seen in the area. The PMZ is considered part of the First Nations 'breadbasket', providing sources of food, medicine, and raw materials. There is one RAAD identified archaeological site in the area, as well as a designated vessel anchorage site.
24 - Stephens Island East	**Purpose:** To protect culturally important species and their habitats. To protect cultural and/or historical values and features, including areas of habitation and marine harvesting. To maintain opportunities for compatible tourism and recreation activities. **IUCN Category:** IV **Size:** 22.7 km² **Description:** Located on the East side of Stephens Island, this area contains important nearshore ecological values and First Nations use areas. The PMZ borders on the Ksgaxl/Stephens Islands Conservancy, which contains high marine and terrestrial values including habitat for numerous bird, marine mammal and marine invertebrate species. Wilderness-based recreation opportunities in the area include kayaking, scuba diving and wildlife viewing.
23 - Stephens Island West	**Purpose:** To protect culturally important species and their habitats. To maintain opportunities for compatible tourism and recreation activities. **IUCN Category:** IV **Size:** 245.6 km² **Description:** Located to the west of Stephens Island and bordering the Ksgaxl/Stephens Islands Conservancy, this area contains unique oceanographic features, including areas of high rugosity that provide important habitat for numerous groundfish, marine bird, mammal, and invertebrate species. The area has a long history of use by First Nations, and continues to be an important marine and intertidal harvesting area. The area offers many wilderness-based recreation opportunities including boating, kayaking, wildlife viewing, and tidal water fishing for salmon and groundfish.
27 - Edye Passage	**Purpose:** To protect culturally important species and their habitats. To maintain opportunities for compatible tourism and recreation activities. **IUCN Category:** IV **Size:** 19.6 km² **Description:** Located north of Porcher Island, this area borders on the southern tip of the Ksgaxl/Stephens Islands Conservancy. The PMZ contains important First Nations cultural values and marine recreational values. Coastal tidal mixing and upwelling in this area drives high productivity seasonally. Eelgrass, bull kelp, and giant kelp provide habitat for a number of marine species, including salmon, herring, shrimp, sea lions, and seabirds. Edye Passage, officially designated as an Important Bird Area (IBA), is a vital staging area for some migratory species, such as surf, black and white-winged scoters and waterfowl. The scenery and abundance of marine wildlife provides for excellent wilderness-based recreation opportunities.

PMZ	Description
26 - Metlakatla Pass	**Purpose:** To protect areas of high First Nations cultural and historical value. To protect unique and/or remote wilderness experiences for tourism and recreation purposes. **IUCN Category:** IV **Size:** 56.7 km^2 **Description:** Metlakatla Pass is a narrow, protected channel separating Digby Island from the Tsimpsean Peninsula. The area is noted for its density of archaeological sites, and was designated a national historic site of Canada in 1972. Archaeological sites include campsites, shell midden, petroglyphs, pictographs, canoe runs, traps, weirs and burial sites. Most sites are located in the intertidal zones or just above intertidal, which makes the sites vulnerable to erosion and wake from boats. The area is also identified as an important area for killer whales.
14 - Skeena Mouth	**Purpose:** To retain the natural diversity and abundance of marine life, and the structure, function and integrity of the area. To protect unique and/or remote wilderness experiences for tourism and recreation purposes. **IUCN Category:** IV **Size:** 225.2 km^2 **Description:** Skeena Estuary is the second largest in BC after the Fraser, and plays a critical role in the ecology of the North Coast of BC. The large eelgrass beds and bull kelp forests support some of the largest fish populations on the coast, including an abundance of forage fish such as eulachon, smelt, and capelin. All Skeena salmon spend part of their life in the estuary and depend on its health as juveniles and returning adults. The estuary was identified as critical waterfowl habitat for BC by the Canadian Wildlife Service. The area holds high cultural and historical significance to First Nations, and includes ancient village sites, harvesting areas, culturally significant sacred places. There are 10 RAAD identified archaeological sites in the PMZ. Public enjoyment of the area is centred on local and guided recreational fishing, wildlife viewing (trumpeter swans, concentrations of waterbirds, northern sea lion and harbour seal during eulachon runs), and historical cannery sites. The PMZ encompasses Kennedy Island Conservancy, and borders on the Skeena Bank and the Ecstall-Spoksuut Conservancies.

Table 26. Group 2 Special Management Zones

Note: Zoning does not direct uses or activities outside of provincial regulatory authority.		
SMZ	**Type**	**Purpose, Size**
SA3 Welcome Harbour	Shellfish Aquaculture	**Purpose:** Allocation of space and maintenance of ecological conditions for sustainable shellfish aquaculture activities in an area with appropriate oceanographic characteristics. **Size**: 10.7 km²
SA9 Digby Island	Shellfish Aquaculture	**Purpose:** Allocation of space and maintenance of ecological conditions for sustainable shellfish aquaculture activities in an area with appropriate oceanographic characteristics. **Size**: 5.8 km²
TR4 Hunt Inlet	Tourism/ Recreation	**Purpose:** Allocation of space and maintenance of conditions for sustainable tourism and recreation activities. **Size**: 11.0 km²
TR10 Quotoon Inlet	Tourism/ Recreation	**Purpose:** Allocation of space and maintenance of conditions for sustainable tourism and recreation activities. **Size**: 9.0 km²
TR11 Work Channel/ Lachmach	Tourism/ Recreation	**Purpose:** Allocation of space and maintenance of conditions for sustainable tourism and recreation activities. **Size**: 2.4 km²
TR12 Kloiya Bay	Tourism/ Recreation	**Purpose:** Allocation of space and maintenance of conditions for sustainable tourism and recreation activities. **Size**: 1.1 km²
RE1 Zanardi Rapids	Renewable Energy	**Purpose:** Allocation of space for future tidal energy development in an area identified with high potential. **Size**: 0.5 km²
RE3 Tuck Narrows	Renewable Energy	**Purpose:** Allocation of space for future tidal energy development in an area identified with high potential. **Size:** 0.7 km²
RE5 Hecate Strait	Renewable Energy	**Purpose**: Allocation of space for future wind energy development in an area identified with high potential. **Size**: 530.5 km²
RE6 Galloway Rapids	Renewable Energy	**Purpose**: Allocation of space for future tidal energy development in an area identified with high potential. **Size**: 0.2 km²
RE7 Butze Rapids	Renewable Energy	**Purpose**: Allocation of space for future tidal energy development in an area identified with high potential. **Size**: 0.8 km²

Table 27. Group 2 Recommended Uses and Activities Table

| Site Name | | General Management Zone | PMZ** | | |

Key:

Aboriginal uses, including practices for food, social and ceremonial purposes, continue in accordance with legal obligations.	
Uses and activities are considered to be 'acceptable' subject to applicable laws, policy and relevant agreements. Acceptability of any use/activity does not guarantee that a use/activity will be approved.	✓
Uses and activities are considered to be 'conditionally acceptable' subject to applicable laws, policy and relevant agreements, and provided they are consistent with (adhere to) the plan conditions. Conditional acceptability of any use/activity does not guarantee that a use/activity will be approved.	O
Uses and activities are considered to be 'not acceptable' and should not be approved.	X
Note: This table does not alter the Province of British Columbia and First Nations referral obligations under existing agreements.	

List of Conditional Statements—Group 2

- O[1]: only research activities that are non extractive and will not disturb sensitive or critical features and habitat are acceptable.
- O[2]: should avoid disturbance of sensitive or critical features and habitat; site limitations to be identified in an approved management plan.
- O[3]: infrastructure enabling First Nations access to adjacent reserve lands is permitted.
- O[4]: activity should be compatible with First Nations cultural use of area; site limitations to be identified in an approved management plan.
- O[5]: infrastructure and associated activities should be compatible with the purpose, vision and/or conservation objectives of protected areas; site limitations to be identified in an approved management plan.
- O[9]: exception for potential future transmission right-of-way associated with renewable energy development.
- O[10]: adherence to established Best Management Practices for the purposes of protecting and managing ecological features and habitats.
- O[12]: requires thorough consultation and statement of compatibility in siting and activity with priority tenure type holders or interested parties (associations/user groups).
- O[13]: tenure or activity should be sited a safe distance from renewable energy activities or infrastructure.
- O[15]: tenure proposal documentation and/or other forms of communication should clearly identify the priority activity of the zone.
- O[16]: tenure or activity should be sited and operated in such a way to minimise impact on sensitive marine species and habitats by following established Best Management Practices for the protection of these values.
- O[17]: requires thorough consultation and statement of compatibility in siting and activity with priority tenure type holders or interested parties (associations/user groups) when operations occur during the months of May to September.

* Some conditional statements refer to management plans that will be developed in the future. Until management plans are developed, conditional activities should consider local values and meet existing legislation, regulation and/or policy requirements including Province of BC and First Nations' referral obligations. Management plans, once developed, may outline additional requirements.

Additional considerations - Group 2

Stephens Pass/ Arthur Island: Sensitive and/or critical features and associated habitats and/or cultural values may be impacted by commercial and recreational fishing activity. Sensitive or critical features, habitat, or species and/or cultural values may be negatively impacted by large commercial vessels and smaller freight or log boom towing vessels. Ecological and cultural values may be impacted by the anchoring of large commercial vessels.

Tree Knob Group: Sensitive and/or critical features and associated habitats and/or cultural values may be impacted by commercial and recreational fishing activity. Sensitive or critical features, habitat, or species and/or cultural values may be negatively impacted by large commercial vessels and smaller freight or log boom towing vessels. Vessel wake on foreshore areas may cause safety concerns during First Nations food harvesting periods.

Lucy Island: Sensitive or critical features, habitat, or species and/or cultural values may be negatively impacted by large commercial vessels and smaller freight or log boom towing vessels. Ecological and cultural values may be impacted by the anchoring of large commercial vessels.

Stephens Island East: Sensitive and/or critical features and associated habitats and/or cultural values may be impacted by commercial fishing activity. Sensitive or critical features, habitat, or species and/or cultural values may be negatively impacted by large commercial vessels and smaller freight or log boom towing vessels. Ecological and cultural values may be impacted by the anchoring of large commercial vessels.

Stephens Island West: Sensitive and/or critical features and associated habitats and/or cultural values may be impacted by commercial fishing activity.

Metlakatla Pass: The commercial value of salmon is high. Sensitive and/or critical features and associated habitats and/or cultural values may be impacted by commercial and recreational fishing activity. Sensitive or critical features, habitat, or species and/or cultural values may be negatively impacted by large commercial vessels and smaller freight or log boom towing vessels.

Skeena Mouth: The commercial value of salmon is high. Sensitive and/or critical features and associated habitats and/or cultural values may be impacted by commercial and recreational fishing activity. Sensitive or critical features, habitat, or species and/or cultural values may be negatively impacted by large commercial vessels and smaller freight or log boom towing vessels. Ecological and cultural values may be impacted by the anchoring of large commercial vessels.

North Coast Spatial Planning: Group 3

Figure 12 shows the area and zone delineation for North Coast spatial planning Group 3.

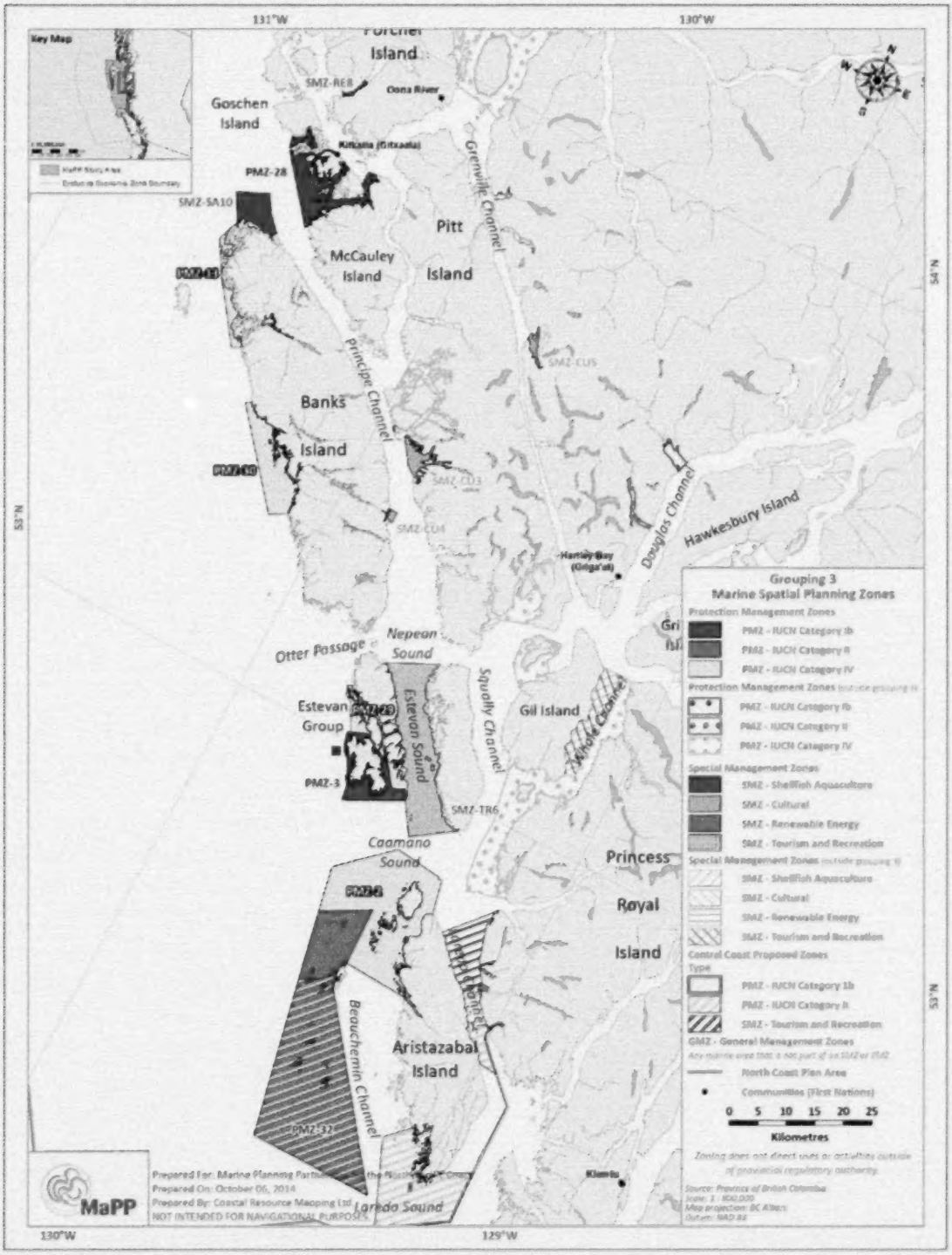


Figure 12. North Coast Group 3 map

Group 3 includes the PMZs listed in Table 28 and SMZs listed in Table 29. Table 30 lists the Recommended Uses and Activities for Group 3.

Table 28. Group 3 Protection Management Zones

Note: Zoning does not direct uses or activities outside of provincial regulatory authority.

PMZ	Description
3 - Dewdney Island	**Purpose:** To complement the existing land based provincial Ecological Reserve on Dewdney and Glide Islands. To protect the diversity of marine species found in the surrounding waters and intertidal habitat, and to protect listed seabird colony nesting areas. **IUCN Category:** Ib **Size:** 48.9 km^2 **Description:** This PMZ is adjacent to Dewdney and Glide Islands Ecological Reserve, protected for its extensive bog and fen ecosystems unique to the outer islands of the North Coast. The Ecological Reserve is closed to the public to protect nesting birds (Sandhill Cranes, blue listed and Cassin's Auklet (blue listed) and their habitat. The PMZ includes an important First Nations harvest area for a number of culturally significant marine species, including halibut, salmon, and shellfish.
28 -Browning Entrance / Dolphin Island	**Purpose:** To protect marine biodiversity and culturally important species and abundances. To protect marine areas adjacent to First Nations communities to support cultural and harvest values. **IUCN Category:** Ib **Size:** 78.3 km^2 **Description:** This PMZ surrounds the Kitkatla/Gitxaala community, whose members use the marine waters daily to harvest more than 30 marine species, including seaweed, abalone, salmon, halibut, seal, and octopus. The marine ecosystem is highly productive and includes provincially significant seabird and shorebird habitat. The PMZ includes significant First Nations cultural area and harvesting sites, including six RAAD identified archaeological sites. The PMZ is adjacent to a federal Rockfish Conservation Area.
32 – Moore Islands	**Purpose:** To protect critical offshore and nearshore habitats and species in key harvesting and cultural areas for First Nations. **IUCN Category:** II **Size:** 508.7 km^2 **Description:** The nearby Ecological Reserves (Moore/McKenney/Whitmore Islands ER and Byers/ Conroy/ Harvey /Sinnett ER) were established to preserve the nesting sites of several species of colonial seabirds, but the current boundaries of the reserves do not include the marine component. Seven species of seabirds breed in significant numbers in the area, which has been designated as an Important Bird Area. Tidal channels, protected bays, sandy beaches and rocky intertidal areas in the PMZ provide varied habitat for extensive kelp beds and associated invertebrates. The area is the ancestral home of First Nations. There are many cultural sites, including six RAAD identified archaeology sites, and origin stories about the area. The waters surrounding Moore Islands contain unique and productive ecosystems, such as exposed shorelines and a seafloor of high rugosity. It is also a larval source for marine invertebrates and rockfish, which are important culturally and as harvest areas for local First Nations.

PMZ	Description
2 - Aristazabal Island North	**Purpose:** To protect areas of high cultural value, including areas of habitation and marine harvesting. To maintain opportunities for compatible tourism recreation activities. **IUCN Category:** IV **Size:** 267.3 km² **Description:** This PMZ contains an important mixing area at the mouth of Moreseby Trough. Coastal tidal mixing and upwelling drives productivity, and the area is important to a diversity of species including herring, halibut, salmon, sea c nber, red sea urchin, geoduck, and stellar sea lions. Aristazabal and the islands around it are the ancestral home of several First Nations, and therefore the location of significant cultural sites, origin stories, and harvesting activities. The area contains 13 RAAD identified archaeology sites. Tourism values in the PMZ including wildlife viewing and scuba diving.
13 - North Banks Island	**Purpose:** To protect marine species, intertidal habitat and archaeological sites in an ancient and contemporary First Nations harvest area. **IUCN Category:** IV **Size:** 25.5 km² **Description:** North Banks Island PMZ includes an area important to the Gitxaala First Nation for harvest of intertidal marine resources, as well as cultural education. The area has a long history of use by First Nations groups, and continues to make a significant contribution to the economy of First Nations people. Several archaeological sites are registered (17), including fish traps, fish weirs, and historical fishing camps. Extensive canopy-forming giant kelp and bull kelp stands occur in the northern and western marine coastline of Banks Island, and provide important habitat for a diversity of marine fish and invertebrates. Other natural features include small estuaries, and seabird and shorebird feeding and moulting areas. There are high tourism values in the area, with nine identified marine campsites and a number of scenic, sheltered inlets suitable for anchoring.
29 - Trutch Island	**Purpose:** To protect areas of high cultural value, including areas of habitation and marine harvesting. To maintain opportunities for compatible recreation and ecotourism. **IUCN Category:** IV **Size:** 35.1 km² **Description:** This is an important cultural harvest area for First Nations. Extensive kelp beds provide habitat for a number of marine species harvested by First Nations including abalone, groundfish, salmon, seaweed, sea urchins, mussels, chitons and seabird eggs. Humpback whales, killer whales, Dall's porpoises, Pacific white-sided dolphins, sea lions and harbour seals prevail in the marine waters of the PMZ. Recreational values include boating, wildlife viewing, and scuba diving. This PMZ is adjacent to Ethelda Bay-Tennant Island Conservancy, which protects a small group of islands and part of the marine environment in the Estevan group.
30 - Central Banks Island	**Purpose:** To protect marine biodiversity, culturally important habitat and species, and cultural sites. **IUCN Category:** IV **Size:** 81.9 km² **Description:** Ancient and historical First Nations cultural sites are located throughout the PMZ, including fishing traps, petroglyphs, and village sites. The coastline is critical habitat for abalone and other intertidal species, and there are important salmon-bearing streams in the inlets. There are two marine campsites identified in the PMZ, and one RAAD archaeology site. The PMZ is adjacent to a federal Rockfish Conservation Area.

Table 29. Group 3 Special Management Zones

Note: Zoning does not direct uses or activities outside of provincial regulatory authority.		
SMZ	**Type**	**Purpose, Size**
SA10 North Tip Banks Island	Shellfish Aquaculture	**Purpose:** Allocation of space and maintenance of ecological conditions for sustainable shellfish aquaculture activities in an area with appropriate oceanographic characteristics. **Size:** 35.8 km²
TR6 Estevan Sound	Tourism/ Recreation	**Purpose:** Allocation of space and maintenance of conditions for sustainable tourism and recreation activities. **Size:** 176.9 km²
CU3 Mink Trap Bay	Cultural	**Purpose:** Identification of areas of high value to First Nations, on a seasonal and year-round basis, for cultural value protection, Aboriginal economic development opportunities and food security. **Size:** 19.5 km²
CU4 Kooryet Bay	Cultural	**Purpose:** Identification of areas of high value to First Nations, on a seasonal and year-round basis, for cultural value protection, Aboriginal economic development opportunities and food security. **Size:** 2.9 km²
CU5 Klewnugget Inlet	Cultural	**Purpose:** Identification of areas of high value to First Nations, on a seasonal and year-round basis, for cultural value protection, Aboriginal economic development opportunities and food security. **Size:** 6.0 km²
RE8 Porcher Narrows	Renewable Energy	**Purpose:** Allocation of space for future tidal energy development in an area identified with high potential. **Size:** 2.2 km²

Photo by Tristan Menzies

Table 30. Group 3 Recommended Uses and Activities Table

Site Name		General Management Zone	PMZ-3 Dewdney Island	PMZ-28 Brooming Entrance/ Dolphin Island	PMZ-32 Moore Islands	PMZ-2 Aristazabal Island North	PMZ-13 North Banks Island	PMZ-29 Tutch Island	PMZ-30 Central Banks Island	Shellfish Aquaculture SMZ	Tourism Recreation SMZ	Cultural SMZ	Renewable Energy SMZ	Central Coast Tourism Recreation SMZ 13	Central Coast PMZ-8	Central Coast PMZ-9a	Central Coast PMZ-9c
	Zone Type	GMZ	PMZ**	PMZ**	PMZ**	PMZ**	PMZ**	PMZ**	PMZ**	SMZ	SMZ	SMZ	SMZ	Central Coast SMZ	Central Coast PMZ	Central Coast PMZ	Central Coast PMZ
Category	**Marine Uses and Activities**																
Aquaculture	Bottom Aquaculture Siting – Marine Plants, Shellfish, Other invertebrates	✓	X	X	$O^{2,4,5}$	$O^{2,4,5}$	$O^{2,4,5}$	$O^{2,4,5}$	$O^{2,4,5}$	✓	$O^{12,16}$	O^{14}	O^{12}	O^{+}	X	X	X
	Off-Bottom Aquaculture Siting – Marine Plants, Shellfish, Other invertebrates	✓	X	X	$O^{2,4,5}$	$O^{2,4,5}$	$O^{2,4,5}$	$O^{2,4,5}$	$O^{2,4,5}$	✓	$O^{12,16}$	O^{14}	O^{12}	O^{+}	X	X	X
	Off-Bottom Aquaculture Siting – Finfish	X	X	X	X	X	X	X	X	X	X	X	X	O^{+}	X	X	X
Energy	Renewable Energy Generation	✓	X	X	$O^{2,4,5}$	$O^{2,4,5}$	$O^{2,4,5}$	$O^{2,4,5}$	$O^{2,4,5}$	O^{12}	$O^{12,16}$	X	✓	O^{+}	X	X	X
Industry	Forestry Operations – Log Handling and Storage	✓	X	X	X	O^{10}	O^{10}	O^{10}	O^{10}	O^{12}	$O^{10,17}$	O^{14}	O^{12}	O^{+}	X	X	X
	Forestry Operations – Helicopter Log Drop Sites	✓	X	X	X	✓	✓	✓	✓	O^{12}	$O^{10,17}$	O^{14}	O^{12}	O^{+}	X	O^{+}	O^{+}
	Mining Operations	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Infrastructure	Commercial and Recreational Anchorages*	✓	X	O^{20}	O^{19}	✓	$O^{2,4,5}$	$O^{2,4,5}$	$O^{2,4,5}$	$O^{12,15}$	✓	O^{14}	O^{13}	O^{+}	X	O^{+}	O^{+}
	Float Homes	✓	X	X	X	X	X	X	X	✓	X	X	X	X	X	X	X
	Floating Lodges	✓	X	X	X	✓	$O^{2,4,5}$	$O^{2,4,5}$	$O^{2,4,5}$	X	✓	O^{14}	X	O^{+}	X	X	X
	Level 1 Docks, Wharves & Facilities	✓	$O^{2,6}$	$O^{2,3,4}$	O^{2}	✓	$O^{2,4,5}$	$O^{2,4,5}$	$O^{2,4,5}$	O^{12}	✓	O^{14}	O^{12}	O^{+}	O^{+}	O^{+}	O^{+}
	Level 2 Docks, Wharves & Facilities	✓	X	X	X	X	X	X	X	X	$O^{12,16}$	X	X	O^{+}	X	X	X
Recreation/ Tourism	Commercial Recreation and Tourism	✓	O^{2}	$O^{2,4}$	O^{2}	✓	✓	✓	✓	$O^{12,15}$	✓	O^{14}	O^{15}	✓	O^{+}	O^{+}	O^{+}
	Public Recreation and Tourism	✓	O^{2}	$O^{2,4}$	O^{2}	✓	✓	✓	✓	$O^{12,15}$	✓	O^{14}	O^{15}	✓	O^{+}	O^{+}	O^{+}
Research	Research	✓	O^{1}	O^{1}	O^{1}	✓	✓	✓	✓	✓	✓	O^{14}	✓	✓	O^{+}	O^{+}	O^{+}
Utilities	Linear Utilities	✓	X	O^{8}	O^{2}	$O^{2,4,}$	$O^{2,4,5}$	$O^{2,4,5}$	$O^{2,4,5}$	$O^{12,13}$	$O^{12,16}$	O^{14}	✓	O^{+}	O^{+}	O^{+}	O^{+}
	Point Source Utilities	✓	X	X	X	X	X	X	X	X	$O^{12,16}$	O^{14}	✓	O^{+}	X	X	X

**Where a use/activity is outside provincial regulatory authority, the approval of that use/activity is subject to the decision-making process(es) of the responsible authorities. Absence does not imply that the use/activity was not considered or evaluated or is of no interest. The reader should contact the appropriate management authority(ies) for direction on uses/activities in such circumstances. Zoning does not direct uses or activities outside of provincial regulatory authority.

*Anchorage restrictions do not apply to commercial towboat reserves and provincially designated boat havens, nor do they apply to vessels in distress or other emergency situations.

Key:

Aboriginal uses, including practices for food, social and ceremonial purposes, continue in accordance with legal obligations.	
Uses and activities are considered to be 'acceptable' subject to applicable laws, policy and relevant agreements. Acceptability of any use/activity does not guarantee that a use/activity will be approved.	✓
Uses and activities are considered to be 'conditionally acceptable' subject to applicable laws, policy and relevant agreements, and provided they are consistent with (adhere to) the plan conditions. Conditional acceptability of any use/activity does not guarantee that a use/activity will be approved.	O
Uses and activities are considered to be 'not acceptable' and should not be approved.	X
Note: This table does not alter the Province of British Columbia and First Nations referral obligations under existing agreements.	

List of Conditional Statements—Group 3

- O[1]: only research activities that are non extractive and will not disturb sensitive or critical features and habitat are acceptable.
- O[2]: should avoid disturbance of sensitive or critical features and habitat; site limitations to be identified in an approved management plan.
- O[3]: infrastructure enabling First Nations access to adjacent reserve lands is permitted.
- O[4]: activity should be compatible with First Nations cultural use of area; site limitations to be identified in an approved management plan.
- O[5]: infrastructure and associated activities should be compatible with the purpose, vision and/or conservation objectives of protected areas; site limitations to be identified in an approved management plan.
- O[6]: Infrastructure enabling access to Dewdney and Glide Islands Ecological Reserve for service and research is acceptable.
- O[9]: exception for potential future transmission right-of-way associated with renewable energy development.
- O[10]: adherence to established Best Management Practices for the purposes of the protection and management of ecological features and habitats.
- O[12]: requires thorough consultation and statement of compatibility in siting and activity with priority tenure type holders or interested parties (associations/user groups).
- O[13]: tenure or activity should be sited a safe distance from renewable energy activities or infrastructure.
- O[14]: requires thorough consultation with the appropriate First Nation in site identification, assessment and establishment of operations.
- O[15]: tenure proposal documentation and/or other forms of communication should clearly identify the priority activity of the zone.
- O[16]: tenure or activity should be sited and operated in such a way to minimise impact on sensitive marine species and habitats by following established Best Management Practices for the protection of these values.

- O[17]: requires thorough consultation and statement of compatibility in siting and activity with priority tenure type holders or interested parties (associations/user groups) when operations occur during the months of May to September.
- O[19]: continued use of existing Moore Islands anchorages and boat havens is permitted.
- O[20]: Anchoring recommended in existing designated anchorage sites in Willis Bay, Connis Cove, Shaman Cove and Spicer Island-unnamed Island Nook. Designate other anchorage sites in collaboration with local First Nations.
- O[+]: for information on conditions that are applicable to Central Coast areas, see the Central Coast Marine Plan.

* Some conditional statements refer to management plans that will be developed in the future. Until management plans are developed, conditional activities should consider local values and meet existing legislation, regulation and/or policy requirements including Province of BC and First Nations' referral obligations. Management plans, once developed, may outline additional requirements.

Additional considerations - Group 3

Browning Entrance/Dolphin Island: Sensitive and/or critical features and associated habitats and/or cultural values may be impacted by commercial and recreational fishing activity. Sensitive or critical features, habitat, or species and/or cultural values may be negatively impacted by large commercial vessels and smaller freight or log boom towing vessels.

Moore Islands: Sensitive and/or critical features and associated habitats and/or cultural values may be impacted by commercial and recreational fishing activity. Sensitive or critical features, habitat, or species and/or cultural values may be negatively impacted by large commercial vessels and smaller freight or log boom towing vessels.

Aristazabal Island North: Sensitive or critical features, habitat, or species and/or cultural values may be negatively impacted by large commercial vessels and smaller freight or log boom towing vessels.

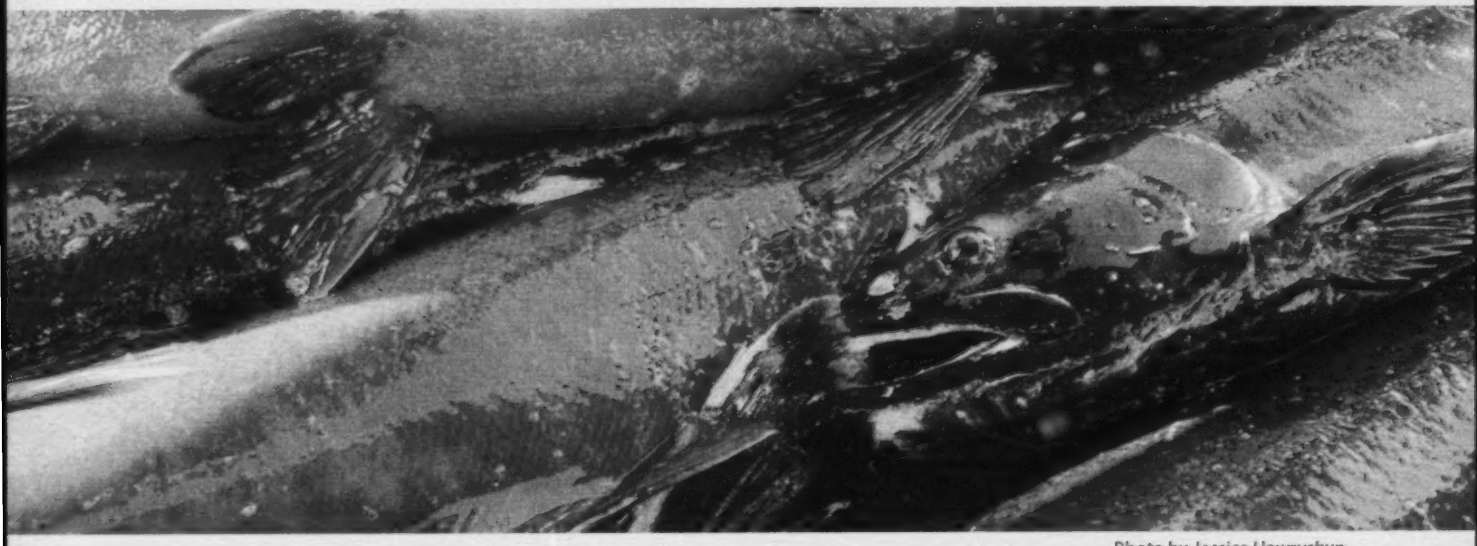


Photo by Jessica Hawryshyn

North Coast Spatial Planning: Group 4

Figure 13 shows the area and zone delineation for North Coast spatial planning Group 4.

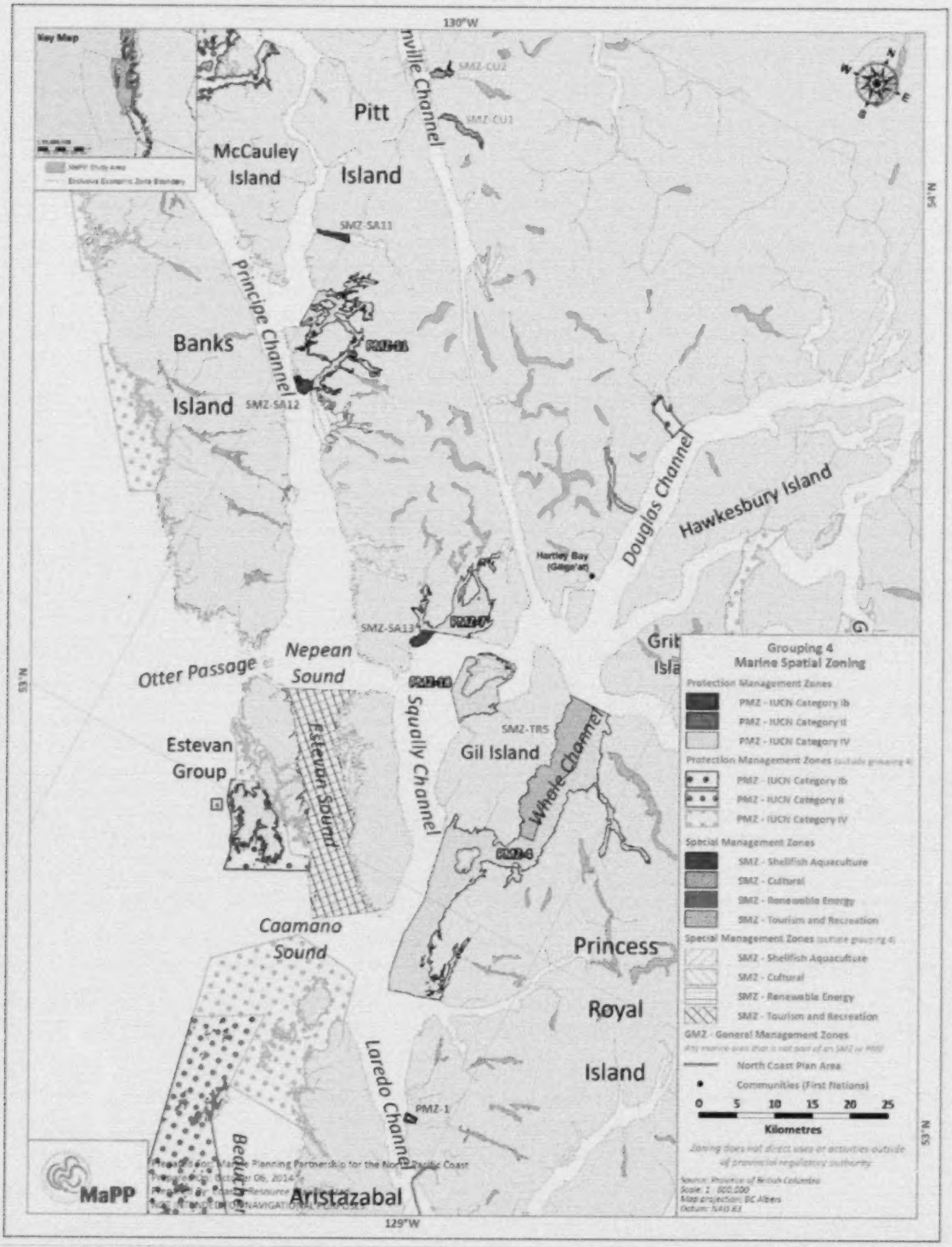


Figure 13. North Coast Group 4 map

Group 4 includes the PMZs listed in Table 31 and the SMZs listed in Table 32. Table 33 lists the Recommended Uses and Activities for Group 4.

Table 31. Group 4 Protection Management Zones

Note: Zoning does not direct uses or activities outside of provincial regulatory authority.

PMZ	Description
1 - Smithers Island	**Purpose:** To protect intertidal habitats and culturally important species abundances. To supplement protection of upland terrestrial values. **IUCN Category:** II **Size:** 1.0 km^2 **Description:** Surrounding the small island at the mouth of Helmcken Inlet on the west side of Princess Royal Island, this PMZ complements the existing land-based Provincial Conservancy on Smithers Island by extending a level of protection into the adjacent marine environment. The intertidal area is crowded with invertebrate species, and the marine waters provide habitat for a number of culturally important fish species including herring, halibut and salmon. Marine mammals in the area include seals, killer whales, and porpoises. The area offers a unique marine wilderness experience for tourists and recreationists.
4 - Campania Sound Whale Channel	**Purpose:** To protect habitat critical to the recovery of threatened or endangered species. To protect areas of high cultural value, including areas of habitation and marine harvesting. **IUCN Category:** IV **Size:** 196.6 km^2 **Description:** This PMZ includes a historical and present day harvest camp for the Gitga'at people. Halibut, groundfish, salmon, shellfish, and seaweed are all harvested in the area and processed at the camp. The marine waters are identified as critical habitat for humpback whales, and potential critical habitat for killer whales; fin whale populations are recovering. Dall's porpoises, Pacific white-sided dolphins, sea lions and harbour seals can also be seen in the area. The PMZ is adjacent to two land-based conservancies. Moksgm'ol/Chapple-Cornwall Conservancy protects the habitat of the Kermode (Spirit) Bear. K'nabiyaaxl/Ashdown Conservancy protects important migratory bird winter habitat and an important Steller sea lion haul-out. The conservancies and adjacent areas have important recreational values to local and international visitors. Floating lodges, saltwater fishing, wildlife viewing, and safe boat anchorages are some of the recreational uses.

PMZ	Description
7 - Union Passage/ Tuwartz Inlet	**Purpose:** To protect the natural diversity and abundance of marine life, and the structure, function and integrity of marine ecosystems. To protect habitats important for various life history stages (e.g., juvenile or spawning areas, nursery grounds). To protect areas of high cultural value, including areas of habitation and marine harvesting. **IUCN Category:** IV **Size:** 39.6 km² **Description:** There are abundant marine resources in the area that support harvesting activities for First Nations, including bivalve harvesting beaches and groundfish and shellfish harvesting areas. There is a salmon migration route to/from Union Passage, and a unique sockeye habitat in the estuary (Tsimtack). Almost eight kilometres of the shoreline is covered by eelgrass bioband, and this provides habitat for a diversity of marine species at various life stages. Other ecological features include inshore rockfish habitat, and marine waters that have been identified as important habitat for humpback whales and potentially critical habitat for killer whales. The PMZ is adjacent to Union Passage Marine Park, which provides a large and placid body of tidal water where boaters find safe anchorages and scenic beaches. There are several ancient First Nations village sites, sacred areas and historical commercial fishing camps in the PMZ.
11 - Markle Pass	**Purpose:** To protect areas of high cultural and historical value, including areas of habitation and marine harvesting. To maintain opportunities for compatible recreation and ecotourism. **IUCN Category:** IV **Size:** 39.6 km² **Description:** Markle Pass is an important First Nations harvesting area, used regularly for hunting and tidal harvesting. Cultural sites within the PMZ include First Nations fishing camps and trapping cabins. There are five RAAD identified archaeology sites. The narrow passages of the area provide a unique and enjoyable wilderness experience, including safe harbour. There are two designated boat havens within the PMZ that are particularly important because of the limited places of safe harbour for recreational boaters within nearby Principle Channel. The gravel and sand beaches are important marine recreation staging areas, and there are two marine campsites in the PMZ.
18 - Fin Island/ MacDonald Bay	**Purpose:** To protect areas of high cultural and historical value, including areas of habitation and marine harvesting. To protect local recreational opportunities focused on appreciation of the natural, cultural and historic values of the area. **IUCN Category:** IV **Size:** 28.0 km² **Description:** Fin Island/ McDonald Bay is an important area for First Nations, supporting historical and present day harvesting of marine resources. Using a seasonal village as a base, First Nations harvest clams, sea cucumber, halibut, groundfish, and salmon. There are bivalve harvest beaches on Fin and Gil Islands. The marine waters are identified as an Important Area for northern resident killer whales, and critical habitat for humpback whales. Dall's porpoises, Pacific white-sided dolphins and harbour seals can also be seen in the waters near Fin Island. MacDonald Bay provides a sheltered anchorage on the west side of Gil Island, ideally situated for small boats heading for the outer coast. There are also sheltered anchorages in Curler, Brant and Hawk Bay, which support opportunities for wilderness-based boating, kayaking, and angling. The PMZ overlaps the Ktisgaidz/Macdonald Bay Conservancy and the Lax Kwil Dziidz/Fin Conservancy. These conservancies were established to protect high archaeological, cultural and biodiversity values.

Table 32. Group 4 Special Management Zones

Note: Zoning does not direct uses or activities outside of provincial regulatory authority.		
SMZ	**Type**	**Purpose, Size**
SA11 Hevenor Inlet	Shellfish Aquaculture	**Purpose:** Allocation of space and maintenance of ecological conditions for sustainable shellfish aquaculture activities in an area with appropriate oceanographic characteristics including depths between 20 – 50m, appropriate amounts of fresh water flow and minimal exposure. **Size:** 2.9 km²
SA12 Anger Island	Shellfish Aquaculture	**Purpose:** Allocation of space and maintenance of ecological conditions for sustainable shellfish aquaculture activities in an area with appropriate oceanographic characteristics including depths between 20 – 50 m and appropriate wave climate. **Size:** 3.6 km²
SA13 Squally Channel	Shellfish Aquaculture	**Purpose:** Allocation of space and maintenance of ecological conditions for sustainable shellfish aquaculture activities in an area with appropriate oceanographic characteristics including depths between 10 – 100 m and minimal fresh water drainage. **Size:** 3.8 km²
CU1 Baker Inlet	Cultural	**Purpose:** Identification of areas of high value to First Nations, on a seasonal and year-round basis, for cultural value protection, Aboriginal economic development opportunities and food security. **Size:** 4.4 km²
CU2 Kumealon Inlet	Cultural	**Purpose:** Identification of areas of high value to First Nations, on a seasonal and year-round basis, for cultural value protection, Aboriginal economic development opportunities and food security. **Size:** 2.6 km²
TR5 Whale Channel	Tourism/ Recreation	**Purpose:** Allocation of space and maintenance of conditions for sustainable tourism and recreation activities. **Size:** 61.2 km²

Table 33. Group 4 Recommended Uses and Activities Table

	Site Name	General Management Zone	PMZ-1 Smithers Island	PMZ-4 Campania Sound/ Whale Channel	PMZ-7 Union Passage/ Tuwartz Inlet	PMZ-11 Markle Pass	PMZ-18 Fin Island/ MacDonald Bay	Shellfish Aquaculture SMZ	Tourism Recreation SMZ	Cultural SMZ
	Zone Type	GMZ	PMZ**	PMZ**				SMZ	SMZ	SMZ
Category	**Marine Uses and Activities**									
Aquaculture	Bottom Aquaculture Siting – Marine Plants, Shellfish, Other Invertebrates	✓	X	O[2,4,5]	O[2,4,5]	O[2,4,5]	O[2,4,5]	✓	O[12,16]	O[14]
	Off-Bottom Aquaculture Siting – Marine Plants, Shellfish, Other invertebrates	✓	X	O[2,4,5]	O[2,4,5]	O[2,4,5]	O[2,4,5]	✓	O[12,16]	O[14]
	Off-Bottom Aquaculture Siting – Finfish	X	X	X	X	X	X	X	X	X
Energy	Renewable Energy Generation	✓	X	O[2,4,5]	O[2,4,5]	O[2,4,5]	O[2,4,5]	O[12]	O[12,16]	X
Industry	Forestry Operations – Log Handling and Storage	✓	X	O[10]	O[10]	O[10]	O[10]	O[12]	O[10,17]	O[14]
	Forestry Operations – Helicopter Log Drop Sites	✓	X	✓	✓	✓	✓	O[12]	O[10,17]	O[14]
	Mining Operations	X	X	X	X	X	X	X	X	X
Infrastructure	Commercial and Recreational Anchorages*	✓	O[18]	O[2,4,5]	O[2,4,5]	✓	O[2,4,5]	O[12,15]	✓	O[14]
	Float Homes	✓	X	X	X	X	X	X	✓	X
	Floating Lodges	✓	X	O[2,4,5]	O[2,4,5]	O[2,4,5]	O[2,4,5,8]	X	✓	O[14]
	Level 1 Docks, Wharves & Facilities	✓	O[2]	O[2,4,5]	O[2,4,5]	O[2,4,5]	O[2,4,5]	O[12]	✓	O[14]
	Level 2 Docks, Wharves & Facilities	✓	X	X	X	X	X	X	O[12,16]	X
Recreation/ Tourism	Commercial Recreation and Tourism	✓	O[2]	✓	✓	✓	✓	O[12,15]	✓	O[14]
	Public Recreation and Tourism	✓	O[2]	✓	✓	✓	✓	O[12,15]	✓	O[14]
Research	Research	✓	O[1]	✓	✓	✓	✓	✓	✓	O[14]
Utilities	Linear Utilities	✓	O[2]	O[2,4,5]	O[2,4,5]	O[2,4,5]	O[2,4,5]	O[12,15]	O[12,16]	O[14]
	Point Source Utilities	✓	X	X	X	X	X	X	O[12,16]	O[14]

**Where a use/activity is outside provincial regulatory authority, the approval of that use/activity is subject to the decision-making process(es) of the responsible authorities. Absence does not imply that the use/activity was not considered or evaluated or is of no interest . The reader should contact the appropriate management authority(ies) for direction on uses/activities in such circumstances. Zoning does not direct uses or activities outside of provincial regulatory authority.

*Anchorage restrictions do not apply to commercial towboat reserves and provincially designated boat havens, nor do they apply to vessels in distress or other emergency situations.

Key:

Aboriginal uses, including practices for food, social and ceremonial purposes, continue in accordance with legal obligations.	
Uses and activities are considered to be 'acceptable' subject to applicable laws, policy and relevant agreements. Acceptability of any use/activity does not guarantee that a use/activity will be approved.	✓
Uses and activities are considered to be 'conditionally acceptable' subject to applicable laws, policy and relevant agreements, and provided they are consistent with (adhere to) the plan conditions. Conditional acceptability of any use/activity does not guarantee that a use/activity will be approved.	O
Uses and activities are considered to be 'not acceptable' and should not be approved.	X
Note: This table does not alter the Province of British Columbia and First Nations referral obligations under existing agreements.	

List of Conditional Statements—Group 4

- O[1]: only research activities that are non extractive and will not disturb sensitive or critical features and habitat are acceptable.
- O[2]: should avoid disturbance of sensitive or critical features and habitat; site limitations to be identified in an approved management plan.
- O[4]: activity should be compatible with First Nations cultural use of area; site limitations to be identified in an approved management plan.
- O[5]: infrastructure and associated activities should be compatible with the purpose, vision and/or conservation objectives of protected areas; site limitations to be identified in an approved management plan.
- O[8]: maintenance of First Nations commercial tourism and recreation opportunities.
- O[10]: adherence to established Best Management Practices for the purposes of protecting and managing ecological features and habitats.
- O[12]: requires thorough consultation and statement of compatibility in siting and activity with priority tenure type holders or interested parties (associations/user groups).
- O[14]: requires thorough consultation with the appropriate First Nation in site identification, assessment and establishment of operations.
- O[15]: tenure proposal documentation and/or other forms of communication should clearly identify the priority activity of the zone.
- O[16]: tenure or activity should be sited and operated in such a way to minimise impact on sensitive marine species and habitats and should follow established Best Management Practices for protecting these values.
- O[17]: requires thorough consultation and statement of compatibility in siting and activity with priority tenure type holders or interested parties (associations/user groups) when operations occur during the months of May to September.
- O[18]: continued use of existing Smithers Island anchorages and boat havens are permitted.

* Some conditional statements refer to management plans that will be developed in the future. Until management plans are developed, conditional activities should consider local values and meet existing legislation, regulation and/or policy requirements including Province of BC and First Nations' referral obligations. Management plans, once developed, may outline additional requirements.

Additional considerations - Group 4

Campania Sound/Whale Channel: Sensitive or critical features, habitat, or species and/or cultural values may be negatively impacted by large commercial vessels and smaller freight or log boom towing vessels. Vessel wake on foreshore areas may cause safety concerns during First Nations food harvesting periods. Sensitive and/or critical features and associated habitats and/or cultural values may be impacted by commercial and recreational fishing activity.

Fin Island/McDonald Bay: Sensitive or critical features, habitat, or species and/or cultural values may be negatively impacted by large commercial vessels and smaller freight or log boom towing vessels. Vessel wake on foreshore areas may cause safety concerns during First Nations food harvesting periods.

Photo by Gilian Dusting

North Coast Spatial Planning: Group 5

Figure 14 shows the area and zone delineation for North Coast spatial planning Group 5.

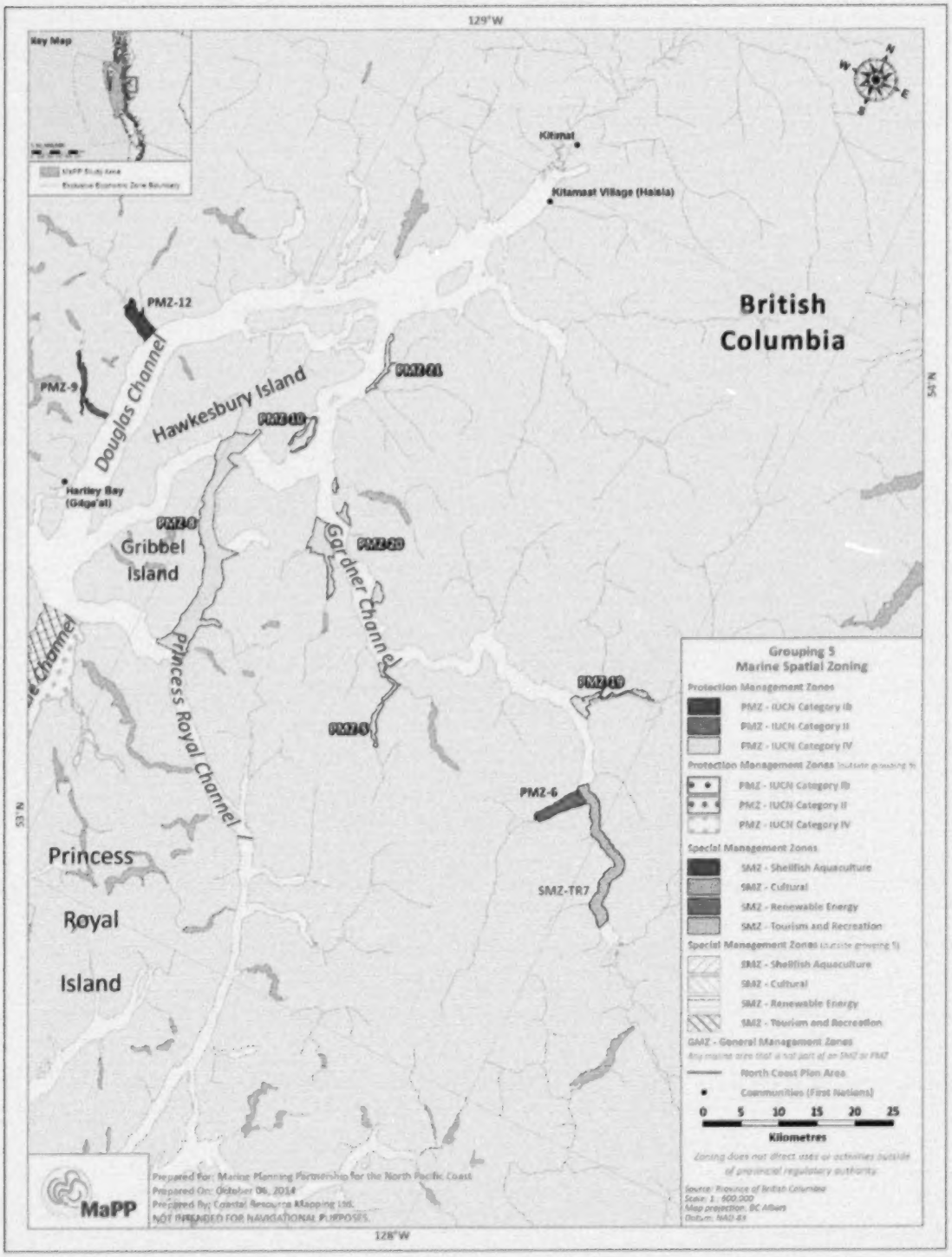


Figure 14. North Coast Group 5 map

Group 5 includes the PMZs listed in Table 34 and the SMZs listed in Table 35. Table 36 lists the Recommended Uses and Activities for Group 5.

Table 34. Group 5 Protection Management Zones

Note: Zoning does not direct uses or activities outside of provincial regulatory authority.	
PMZ	**Description**
12 – Kitkiata Inlet	**Purpose:** To protect marine habitats that support high species diversity and abundance (e.g., estuaries, cloud sponge communities). **IUCN Category:** Ib **Size:** 8.6 km^2 **Description:** Kitkiata Inlet is socially and culturally important to First Nations. The Gitga'at First Nation have historically inhabited this area including a village site on an island on the estuary. They continue to use this area for habitation, fishing, hunting, trapping, food harvesting and other cultural uses. Petroglphys can be found in the Inlet. The estuary at the end of the inlet is one of the top-ranking wetlands on the North Coast, supporting large numbers of waterfowl and spawning salmon. Recreational values include safe, protected anchorages, canoeing, kayaking and wildlife viewing.
6 – Chief Mathews Bay	**Purpose:** To protect eelgrass meadows, kelp beds, estuaries and other marine habitats that support high species diversity and abundance and traditional marine harvesting. **IUCN Category:** II **Size:** 9.9 km^2 **Description:** Chief Matthews Bay is a small estuary with a high intertidal zone that supports diverse meadow communities and high species abundance. The estuary is notable for its diverse plant communities. All five species of pacific salmon, herring, and eulachon spawn throughout the many rivers and creeks that empty into the Bay. Tucked away off of Gardner Canal, the area provides a unique, remote marine wilderness experience.
9 - Kiskosh Inlet	**Purpose:** To protect eelgrass meadows, kelp beds, estuaries other marine habitats that support high species diversity and abundance and marine harvesting. **IUCN Category:** II **Size:** 6.0 km^2 **Description:** Kiskosh Inlet is an important area for First Nations harvesting and cultural use. Shellfish, crab, groundfish, salmon and prawn are all traditionally harvested in the area by First Nations. There are five RAAD archaeological sites identified in the PMZ. Nearby Alty Conservancy protects Kiskosh Lagoon, an area of high value for grizzly bear and bird habitat.
5 – Kiltoish Inlet	**Purpose:** To protect habitats important for various life history stages (e.g., juvenile or spawning areas, nursery grounds). **IUCN Category:** IV **Size:** 6.8 km^2 **Description:** Kiltoish Inlet is an area of high cultural and First Nations use value. The inlet is an important harvest area for salmon, crab, mussels and other bivalves. The Kiloish River flows into the head of the inlet and has productive Pink and Chum Salmon runs. There are six RAAD identified archaeology sites in the PMZ.

PMZ	Description
8 – Ursula Channel	**Purpose:** To protect marine habitats that support high species diversity and abundance (e.g., eelgrass meadows, kelp beds, cloud sponge communities). **IUCN Category:** IV **Size:** 74.1 km² **Description:** Ursula Channel is important for First Nations harvesting and cultural use, and provides unique recreational opportunities. The diverse marine plant communities provide habitat for a number of shellfish species at various life stages. Humpback whales, killer whales, Dall's porpoises, Pacific white-sided dolphins, sea lions and harbor seals can also be seen in these marine waters. The area contains a number of attractive small beaches, important intertidal habitats, and shellfish harvesting areas. Nearby Bishop Bay-Monkey Beach Conservancy protects one of the most popular marine hot springs and boat anchorage along the Inside Passage. Monkey Beach got its name from legendary sightings of monkey-like creatures (Sasquatch) by local First Nations.
10 – Kitsaway Passage	**Purpose:** To protect cultural and historical values and features, including areas of habitation and marine harvesting, To protect areas that support unique and/or remote marine and wilderness experiences. **IUCN Category:** IV **Size:** 3.4 km² **Description:** The shoreline forests and maritime interface habitat of Kitsaway Passage provide food sources and secure forested denning and nesting sites for such species as Mink, River Otter and Bald Eagle. Marine recreation, safe anchorage, sport fishing tourism, and whale watching activities are important recreational values in the area.
19 - Kemano	**Purpose:** To protect habitats and species of special significance. To protect important First Nations harvest and cultural areas. **IUCN Category:** IV **Size:** 7.9 km² **Description:** The Kemano River estuary supports the spawning of a highly important eulachon run. The harvest of eulachon is an integral part of the coastal First Nations' culture. Generations of Haisla have harvested eulachon from the area, to be used as food or rendered to grease for use locally or for trade with interior First Nations. There is a Haisla eulachon processing camp on the north side of the PMZ. Kemano Indian Reserve is located at the site of the Henaksiala village.

PMZ	Description
20 – Gardner Canal	**Purpose:** To protect habitat and species of special significance to First Nations for harvest and cultural use. **IUCN Category:** IV **Size:** 19.8 km² **Description:** A side inlet of the larger Douglas Channel, Gardner Canal is a long, narrow, steep-sided coastal inlet that provides important habitat for a number of marine species. At the head of the Canal is a rich and well-developed estuary, which is the 'ecological heart' of the watershed providing critical habitat to a wide array of fish and wildlife species. A dynamic intertidal zone provides sanctuary and habitat for over-wintering birds and an abundance of tidal zone flora and fauna. Outside of salmon, the Canal is noted for a historical run of eulachon. There are many cultural heritage features in the area, including village sites, pictographs, culturally modified trees, resource harvesting areas and legend sites. Many of these cultural heritage features have Haisla names and stories associated with them. Since time immemorial, the Haisla have used resources in the area for food, medicines, materials for weaving and building, and for spiritual purposes. Gardner Canal is a popular area for recreational boating and wildlife viewing. This PMZ is adjacent to the Huchsduwachsdu Nuyem Jees/Kitlope Heritage Conservancy, at the head of Gardner Canal.
21 – Devastation Channel	**Purpose:** Protection of important and unique marine habitat that is important to First Nation harvest and culture, along with areas that can be used for tourism and recreational purposes. **IUCN Category:** IV **Size:** 4.7 km² **Description:** In Devastation Channel PMZ, there are numerous examples of Haisla culturally modified trees dating pre-1846; they are protected under the Heritage Conservation Act The coastal scenery and landscape provides stopping places of interest for boats, as well as shelter from storms. Within the PMZ there is one marine campsite and one dive site identified. Devastation Channel sees much local use, especially enroute to sport fishing locales and hotsprings. The PMZ is adjacent to Weewanie Hot Springs Provincial Park, a popular boat access only park in a semi-sheltered bay. It is used by recreational and commercial boaters for hot springs soaking, anchorage and camping.

Table 35. Group 5 Special Management Zones

Note: Zoning does not direct uses or activities outside of provincial regulatory authority.		
SMZ	**Type**	**Purpose, Size**
TR7 - Gardner Canal	SMZ Tourism/Recreation	**Purpose:** Allocation of space and maintenance of ecological conditions to support compatible tourism and recreation activities in an area adjacent to an existing land-based conservancy. **Size:** 27.4 km²

Table 36. Group 5 Recommended Uses and Activities Table

	Site Name	General Management Zone	PMZ-12 Kitkata Inlet	PMZ-6 Chief Matthews Bay	PMZ-9 Kaloosh	PMZ-5 Kiltoish	PMZ-8 Ursula Channel	PMZ-10 Kitsaway Passage	PMZ-19 Kemano	PMZ-20 Gardner Canal	PMZ-21 Devastation Channel	Tourism Recreation SMZ
	Zone Type	GMZ	PMZ**	PMZ**		PMZ**						SMZ
Category	**Marine Uses and Activities**											
Aquaculture	Bottom Aquaculture Siting – Marine Plants, Shellfish, Other Invertebrates	✓	X	X	X	O[2,4,5]	O[2,4,5]	O[2,4,5]	O[2,4,5]	O[2,4,5]	O[2,4,5]	O[12,16]
	Off-Bottom Aquaculture Siting – Marine Plants, Shellfish, Other invertebrates	✓	X	X	X	O[2,4,5]	X	X	O[2,4,5]	X	O[2,4,5]	O[12,16]
	Off-Bottom Aquaculture Siting – Finfish	X	X	X	X	X	X	X	X	X	X	X
Energy	Renewable Energy Generation	✓	X	X	X	O[2,4,5]	O[2,4,5]	O[2,4,5]	O[2,4,5]	O[2,4,5]	X	O[12,16]
Industry	Forestry Operations – Log Handling and Storage	✓	X	X	X	O[10]	O[10]	O[10]	O[10]	O[10]	O[10]	O[10,17]
	Forestry Operations – Helicopter Log Drop Sites	✓	X	O[2,5]	O[2,5]	✓	✓	✓	✓	✓	✓	O[10,17]
	Mining Operations	X	X	X	X	X	X	X	X	X	X	X
Infrastructure	Commercial and Recreational Anchorages*	✓	O[2,3,4]	O[2]	✓	O[2,4,5]	O[2,4,5]	O[2,4,5]	O[2,4,5]	O[2,4,5]	✓	✓
	Float Homes	✓	X	X	X	X	X	X	X	X	X	✓
	Floating Lodges	✓	X	X	X	O[2,4,5]	O[2,4,5,8]	O[2,4,5]	O[2,4,5]	O[2,4,5]	O[2,4,5]	✓
	Level 1 Docks, Wharves & Facilities	✓	X	O[2,4]	O[2,4,5]	O[2,4,5]	O[2,4,5]	O[2,4,5]	O[2,4,5]	O[2,4,5]	O[2,4,5]	✓
	Level 2 Docks, Wharves & Facilities	✓	X	X	X	X	X	X	X	X	X	O[12,16]
Recreation/ Tourism	Commercial Recreation and Tourism	✓	O[2,4]	O[2]	O[2,4,5]	✓	O[2,4,5,8]	O[2,4,5]	✓	O[2,4,5]	✓	✓
	Public Recreation and Tourism	✓	O[2,4]	O[2]	O[2,4,5]	✓	✓	O[2,4,5]	✓	O[2,4,5]	✓	✓
Research	Research	✓	O[1]	O[1]	✓	✓	✓	✓	✓	✓	✓	✓
Utilities	Linear Utilities	✓	X	O[2]	X	O[2,4,5]	O[2,4,5]	O[2,4,5]	O[2,4,5]	O[2,4,5]	O[2,4,5]	O[12,16]
	Point Source Utilities	✓	X	X	X	X	X	X	X	X	X	O[12,16]

**Where a use/activity is outside provincial regulatory authority, the approval of that use/activity is subject to the decision-making process(es) of the responsible authorities. Absence does not imply that the use/activity was not considered or evaluated or is of no interest . The reader should contact the appropriate management authority(ies) for direction on uses/activities in such circumstances. Zoning does not direct uses or activities outside of provincial regulatory authority.

*Anchorage restrictions do not apply to commercial towboat reserves and provincially designated boat havens, nor do they apply to vessels in distress or other emergency situations.

Key:

Aboriginal uses, including practices for food, social and ceremonial purposes, continue in accordance with legal obligations.	
Uses and activities are considered to be 'acceptable' subject to applicable laws, policy and relevant agreements. Acceptability of any use/activity does not guarantee that a use/activity will be approved.	✓
Uses and activities are considered to be 'conditionally acceptable' subject to applicable laws, policy and relevant agreements, and provided they are consistent with (adhere to) the plan conditions. Conditional acceptability of any use/activity does not guarantee that a use/activity will be approved.	O
Uses and activities are considered to be 'not acceptable' and should not be approved.	X
Note: This table does not alter the Province of British Columbia and First Nations referral obligations under existing agreements.	

List of Conditional Statements—Group 5

- O[1]: only research activities that are non extractive and will not disturb sensitive or critical features and habitat are acceptable.
- O[2]: should avoid disturbance of sensitive or critical features and habitat; site limitations to be identified in an approved management plan.
- O[3]: infrastructure enabling First Nations access to adjacent reserve lands is permitted.
- O[4]: activity should be compatible with First Nations cultural use of area; site limitations to be identified in an approved management plan.
- O[5]: infrastructure and associated activities should be compatible with the purpose, vision and/or conservation objectives of protected areas; site limitations to be identified in an approved management plan.
- O[8]: maintenance of First Nations commercial tourism and recreation opportunities.
- O[10]: adherence to established Best Management Practices for the purposes of protecting and managing ecological features and habitats.
- O[12]: requires thorough consultation and statement of compatibility in siting and activity with priority tenure type holders or interested parties (associations/user groups).
- O[16]: tenure or activity should be sited and operated in such a way to minimise impact on sensitive marine species and habitats and should follow established Best Management Practices for protecting these values.
- O[17]: requires thorough consultation and agreed upon compatibility in siting and activity with priority tenure type holders or interested parties (associations/user groups) when operations occur during the months of May to September.

* Some conditional statements refer to management plans that will be developed in the future. Until management plans are developed, conditional activities should consider local values and meet existing legislation, regulation and/or policy requirements including Province of BC and First Nations' referral obligations. Management plans, once developed, may outline additional requirements.

Additional considerations – Group 5

Kitkiata: Sensitive and/or critical features and associated habitats and/or cultural values may be impacted by commercial and recreational fishing activity. Sensitive or critical features, habitat, or species and/or cultural values may be negatively impacted by large commercial vessels.

Chief Matthews Bay: Sensitive and/or critical features and associated habitats and/or cultural values may be impacted by commercial and recreational fishing activity.

Kishkosh: Sensitive and/or critical features and associated habitats and/or cultural values may be impacted by commercial and recreational fishing activity. Sensitive or critical features, habitat, or species and/or cultural values may be negatively impacted by large commercial vessels.

Ursula Channel: Sensitive or critical features, habitat, or species may be negatively impacted by large commercial vessels and smaller freight or log boom towing vessels.

Kemano: Sensitive or critical features and habitat may be negatively impacted by large commercial vessels and smaller freight or log boom towing vessels, though it is noted that smaller freight loading at existing facilities is an important activity in the area.

Gardner Canal: Sensitive and/or critical features and associated habitats and/or cultural values may be impacted by commercial and recreational fishing activity.

CHAPTER 6: PLAN IMPLEMENTATION AND MONITORING

The objectives, strategies and spatial recommendations in the North Coast Marine Plan will be put into action as outlined in an implementation agreement, which is expected to include a work plan (including planning priorities) and commitments to plan implementation, review and amendments. The Province of British Columbia is proposing to engage with the Nisga'a Nation on the North Coast Marine Plan and its implementation in 2015.

Effective implementation of the North Coast Marine Plan will require human resourcing and long-term funding. All parties have worked together to identify resourcing requirements and to establish funding mechanisms.

6.1 Plan Implementation Committees

The organisational structure to support plan implementation is under discussion. However, a technical coordinating body comprised of representatives from the Province of British Columbia and First Nations is envisaged to guide and oversee the plan implementation process. A joint Terms of Reference will clearly outline member roles and scope of responsibilities.

Plan implementation will be guided by the priorities identified in Section 6.2, and the work plan will outline how the objectives and strategies in this plan can be achieved. The work plan will describe the actions associated with each strategy, identify the parties involved, outline the funding required and define general timelines to achieve implementation. It will respect the jurisdictional authorities of each party and will consider engagement with stakeholders who have a particular interest in key issues, objectives and strategies.

The technical coordinating body will be responsible for coordinating the various parties involved in implementation, and will be tasked with carrying out parts of the plan, as appropriate, depending on funding and staff availability. Similarly, other organisations and individuals may assist with plan implementation.

An implementation and monitoring committee will be created that will be comprised of representatives from local governments and key marine use and activity sectors in the plan area. The committee may provide assistance and advice on monitoring and indicators, plan evaluation, review and amendment, and other issues as identified by the technical coordinating body. Membership will be confirmed by the technical coordinating body and a Terms of Reference will be established to outline the committee's roles, responsibilities and engagement schedule.

6.2 Implementation Priorities

While all of the objectives and strategies identified in the plan are important elements of an integrated EBM approach for North Coast waters, a number of key outcomes and priority actions have been identified (Table 37). These priorities were identified with input from the North Coast Marine Plan Advisory Committee and the public review process. This list does not preclude the identification of additional priorities as the need or opportunity arises.

In the near term, the partners seek to advance implementation of the priority areas identified in Table 37. The strategies listed in Table 37 will be initiated within the first six months of finalization of the plan, and have a range of timeframes for completion. While these priorities are the focus for near-term implementation (many strategies will be completed within 18 months), action may be taken on other strategies identified in the plan, although most will be implemented over the longer term (five years and beyond). The goal is to implement all strategies over the longer term, as funding and other resources permit. Ongoing communication and collaboration will be essential as work is advanced on all plan strategies.

Table 37. North Coast key outcomes and priority actions

Key Outcomes	Priority Actions
Governance	
Meaningful government to government partnerships are established.	**Governance Strategy 1.3.** Explore mechanisms for ensuring meaningful engagement of First Nations in decision-making beyond or in place of Reconciliation Protocols.
	Governance Strategy 1.4. Explore mechanisms for expanding the role of First Nations in the tenuring decision-making process.
	Governance Strategy 1.6. Support efforts to expand the role of First Nations in monitoring and enforcement activities.
	Compliance and Enforcement Strategy 2.3. Jointly review and, where appropriate, establish formal agreements between First Nations and applicable provincial agencies that greater enable First Nations involvement in compliance and enforcement activities.
Collaborative marine governance and implementation structures are developed.	**Governance Strategy 2.1.** Assess needs and identify resources required to ensure enduring governance structures are established and maintained to support implementation of the North Coast marine plan.
	Governance Strategy 2.3. Support the development of enduring, inclusive governance arrangements for designing and implementing a marine protected area network.
	Governance Strategy 2.8. Create adaptive management protocols that ensure that new marine resource and use information is integrated into policies, programs, and monitoring and enforcement practices.
	Governance Strategy 2.10. Establish and support a First Nations Technical Marine Planning and Resource Management Table.
	Cumulative Effects Strategy 4.5. Work with relevant governments and agencies to establish collaborative governance arrangements for monitoring cumulative effects and guiding methodologies and management actions.
	Cumulative Effects Strategy 1.1. Develop governance arrangements for implementing the MaPP cumulative effects framework.
First Nations governance, management, and enhancement of resources are supported.	**First Nations Resource Use and Management Strategy 2.1.** Consistent with government to government agreements, develop collaborative governance structures that are compatible with, and integrate, Aboriginal governance structures and Aboriginal knowledge.
	First Nations Resource Use and Management Strategy 2.2. Identify mechanisms for integrating Aboriginal knowledge and resource management practices into provincial-level planning and regulation.
	Compliance and Enforcement Strategy 3.2. Develop communications materials that inform marine users and the general public about Aboriginal rights and title, and indigenous laws and resource management practices as they pertain to marine areas and activities.

Key Outcomes	Priority Actions
Capacity is enhanced for resource protection and management.	**Governance Strategy 3.5.** Develop First Nations capacity for enhanced engagement in the provincial environmental assessment and tenure referrals processes to facilitate collaborative resource management.
	First Nations Resource Use and Management Strategy 2.3. Support First Nations capacity for managing and responding to referrals.
	Compliance and Enforcement Strategy 1.5. Ensure secure, long-term funding and capacity exists among partners for appropriate levels of enforcement, with particular attention to enforcement within Marine Protected Areas.
	Monitoring Strategy 2.1. Support the expansion of First Nations stewardship and resource management programs to enhance capacity for field monitoring and data collection.
Collaboration and Consultation	
Collaboration is formalized, information is shared, and actions are coordinated.	**Governance Strategy 2.6.** Establish a collaborative stakeholder advisory process that supports successful implementation of the North Coast marine plan.
	Monitoring Strategy 1.4. Develop a monitoring and assessment needs report for current and future requirements, including resources, across all agencies.
	Compliance and Enforcement Strategy 2.6. Establish partnerships with BC Parks to ensure adequate patrols of existing and future provincial parks and conservancies.
Consultation processes are coordinated, efficient and thorough.	**Governance Strategy 1.1.** Jointly review, and where necessary improve existing provincial policy regarding tenure proponents' engagement with First Nations to develop consistent consultation and collaboration.
	Governance Strategy 3.1. Support and facilitate the development of First Nations consultation policies.
	Governance Strategy 3.2. Improve consistency between First Nations consultation policies and provincial consultation policies.
	Governance Strategy 3.4. Facilitate the development of First Nations protocols with proponents regarding development and tenures, including best practices, economic benefits and accountability.
	Land Policies and Procedures Strategy 1.3. Develop a handbook for proponents about best practices and legal obligations regarding First Nations consultation, which includes protocol agreement templates.

Key Outcomes	Priority Actions
Cumulative Effects	
Cumulative effects are understood and data needs identified.	**Cumulative Effects Strategy 1.3.** Establish partnerships with education institutions, non-government organizations, and industry to facilitate cumulative effects research.
	Cumulative Effects Strategy 2.1. Commission a thorough literature review and gap analysis to compile all existing socioeconomic and ecological data that are relevant to cumulative effects assessment.
	Cumulative Effects Strategy 2.2. Collaboratively identify types, scope and scale of studies, including geographic and temporal frames.
	Cumulative Effects Strategy 2.3. Contract First Nations and local stewardship groups to design and conduct baseline studies to fill data gaps.
	Cumulative Effects Strategy 3.1. Commission an expert report on potential effects of proposed development(s) on ecological, social and cultural values.
	Cumulative Effects Strategy 4.3. Contract First Nations and non-governmental organizations to design and implement a cumulative effects monitoring program.
Cumulative effects are managed and mitigated, and resource values are sustained.	**Cumulative Effects Strategy 3.2.** Collaboratively identify impact limits and development thresholds, and determine appropriate management actions.
	Cumulative Effects Strategy 3.3. Identify mechanisms for enforcing limits and thresholds through legislative reform, requirements for proponents or tenure holders, or other methods.
	Cumulative Effects Strategy 2.4. Identify mechanisms to initiate further studies as new projects and types of impacts are integrated into the cumulative effects framework.
	Cumulative Effects Strategy 4.1. Collaboratively develop strategies to mitigate negative impacts on core coastal and marine values.
	Cumulative Effects Strategy 4.2. Identify mechanisms for effective implementation of mitigation strategies.
	Cumulative Effects Strategy 4.4. Identify mechanisms to ensure that monitoring data are integrated into resource management decision-making.
	Land Policies and Procedures Strategy 2.2. Assess the cumulative effects of activities when considering applications for tenure.

Key Outcomes	Priority Actions
Stewardship	
Important ecological and cultural values are identified for protective management.	**First Nations Resource Use and Management Strategy 1.3.** Develop local-scale marine use plans in areas where important cultural components and First Nations values exist, as identified in Figure 6.
	Marine Protection Strategy 1.2. Collaboratively develop and implement an evaluation framework to identify Protection Management Zones that would benefit from permanent, legal protection through MPA designation.
	Marine Protection Strategy 1.3. Collaboratively identify Protection Management Zones that will be advanced for consideration in the Canada-BC-First Nations MPA Network planning process.
	Marine Protection Strategy 1.4. Integrate local and Aboriginal knowledge into MPA planning to improve scientific information and fill data gaps.
	Marine Protection Strategy 3.1. Support and facilitate ongoing efforts to identify, map, assess and restore quality of habitats in the North Coast plan area.
	Marine Protection Strategy 3.4. Work collaboratively to identify sensitive species and habitats and critical features to support the development of management plans for North Coast spatial zoning.
	Marine Response Strategy 1.1. Identify important First Nations cultural values and sites.
	Marine Response Strategy 1.2. Identify important areas of cultural, economic and ecological value to local communities and stakeholders.
	Marine Response Strategy 3.1. Assess spill preparedness and response management capacity in the plan area.
Heritage resources, cultural practices and archaeological sites are protected.	**Heritage Sites and First Nations Cultural Areas Strategy 2.1.** Develop guidelines for human activities within sensitive cultural and archaeological sites that may inform management direction and establish regulations to reduce negative impacts.
	Heritage Sites and First Nations Cultural Areas Strategy 2.2. Support the development of site-specific plans for key heritage resources and archaeological sites.
	Heritage Sites and First Nations Cultural Areas Strategy 4.2. Support First Nations in developing interpretive signs that identify sensitive cultural areas, direct use of areas and provide cultural information.
	Heritage Sites and First Nations Cultural Areas Strategy 5.2. Support and facilitate the development of First Nations research policies to direct and manage research in their territories.

Key Outcomes	Priority Actions
The adverse effects of climate change are anticipated and adaptive capacity is strengthened.	**Climate Change Strategy 1.7.** Identify and map carbon sinks and protect and restore them.
	Climate Change Strategy 2.1. Conduct a climate change vulnerability assessment and mitigation plan for North Coast First Nations and local food networks and food security.
	Climate Change Strategy 2.2. Communicate the potential impacts of climate change through community outreach and public education, and include general household-level preparedness for emergencies.
	Climate Change Strategy 4.3. Identify marine infrastructure that is vulnerable to climate change impacts and prioritise sites for mitigation.
Sustainable Economies	
Opportunities for sustainable economic development are identified and supported through an EBM-framework.	**Renewable Energy Strategy 2.1.** Maintain renewable energy opportunities through Renewable Energy Special Management Zones.
	Shellfish and Marine Plant Aquaculture Strategy 2.7. Communicate the viability of shellfish and marine plant aquaculture within the plan area, in particular, the Aquaculture Special Management Zones.
	Forestry Operations Strategy 1.4. Ensure the forest industry has access to a network of log handling and storage sites that accommodate industry requirements while considering the needs of First Nations and other user groups.
	Tourism and Recreation Strategy 1.3. Work with stakeholder groups to identify appropriate marine access campsite locations.
	Tourism and Recreation Strategy 1.5. Develop and implement outreach and interpretive programs to improve awareness of local cultures and traditions, including First Nations interpretive signage throughout their territories.
	Tourism and Recreation Strategy 1.7. Develop tourism and recreation opportunities through Tourism Recreation Special Management Zones.
	Marine Fisheries Economy Strategy 1.4. Support development of value-added markets for North Coast products.
	Economic Well Being Strategy 2.1. Identify sustainable marine economic development opportunities and constraints in the North Coast plan area.

6.3 Socioeconomic, Cultural and Ecological Assessment

The North Coast Marine Plan provides a coordinated and sustainable approach to management and use of the marine environment. The plan provides opportunities for marine resources and services to be used within clear environmental limits, while ensuring that marine ecosystems remain healthy and biodiversity is conserved. Properly executed, the plan is expected to have an overall positive effect on the cultural, ecological, social and economic future of the North Coast and BC in general.

It is important to assess the short- and long-term effects of the plan because changes resulting from the plan will affect different users or values in different ways. A socioeconomic, cultural and ecological assessment was conducted for the four MaPP sub-regional plans, including the North Coast. The assessment applied a multiple accounts analysis to compare the future condition of various resources and values within the plan area, with

and without the North Coast marine plan. The results of this assessment were used to further refine planning outcomes and to help inform decision-makers tasked with approving the plan.

6.4 Plan Evaluation, Review and Amendment

The North Coast Marine Plan is intended to be a living document that will be updated over time to remain relevant as issues, priorities and conditions change. This adaptive approach will allow for improved management and responsible stewardship over both the short and long term.

North Coast Marine Plan performance will be measured through implementation monitoring and effectiveness monitoring. Implementation monitoring will track the progress of projects and programs related to implementation of the North Coast Marine Plan. Effectiveness monitoring will assess whether implementation of the strategies and spatial zoning is effective at achieving the objectives and management intent of the plan.

Photo by Metlaktala Communications Program

It is anticipated that a comprehensive evaluation of the plan will be conducted collaboratively every 5 years, and will consider emerging management needs and priorities, and results from annual reports. EBM indicators will be used to track changes in the state of the North Coast ecological and human wellbeing systems over time. Trends in EBM indicators point to whether plan objectives are being achieved, and provide warning signs about potential or growing threats to marine values. Indicators for key EBM components have been identified through a regional MaPP process and indicators will be adapted and applied at the North Coast scale. For more information on potential indicators refer to Appendix 7: Potential EBM Indicators.

6.5 Plan Compliance, Plan Variance

As elements of the North Coast Marine Plan are implemented, it will be necessary to ensure that plan objectives are adhered to. Policies, regulations, guidelines and/or management plans may need to be revised to be consistent with plan objectives. Marine plan objectives and recommended uses and activities within the GMZ, SMZs and PMZs will be considered during the screening of tenure applications for relevant marine activities and uses. Similarly, the general public will need to be made aware of any regulations, zoning designations, or permit/licensing requirements.

Any request for a variation to a zoning requirement will be reviewed by the Province of BC and the Gitga'at, Gitxaala, Haisla, Kitselas, Kitsumkalum, and Metlakatla First Nations. The Technical Team will receive notice of any tenure application containing a request for a variation to a specified zoning category in the plan and will make recommendations to the Province of BC and the Gitga'at, Gitxaala, Haisla, Kitselas, Kitsumkalum, and Metlakatla First Nations, in respect of the request. Applications for variance will be assessed based on criteria determined by the Province of BC and the Gitga'at, Gitxaala, Haisla, Kitselas, Kitsumkalum, and Metlakatla First Nations. These criteria may include consideration of new technologies/methods of operation, new activities or ventures, and/or new information that were not available when the plan was developed. A successful application containing a request for variation will not automatically result in a change to the recommended uses and activities in the plan for specific zones. Changes to such recommended uses and activities may, however, be considered during periodic review if there has been a number of successful applications containing variation requests.

Acceptance of, and support for, a proposed plan variance request should not be interpreted as approval of, or support for, the issuance of any authorisation.

The plan variance process will be formalised in an agreement between the provincial government and member and partner Nations of the North Coast-Skeena First Nations Stewardship Society.

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APPENDIX 1: USES AND ACTIVITY DEFINITIONS

The descriptions in Table 38 apply to all MaPP outputs, including the compatibility matrix, Recommended Uses and Activities Tables for proposed protection management zones, and the vulnerability matrix.

The marine uses and activities listed here presently occur in the MaPP study area and/or are potential future uses. The descriptions are not intended to define thresholds and/or acceptable intensity of use; thresholds/ density and intensity vary from place to place and will be determined in local management prescriptions.

Table 38. MaPP uses and activities definitions

Marine Use or Activity		Description
Aquaculture	Bottom Aquaculture Siting – Marine Plants, Shellfish, Other Invertebrates	Selection of areas suitable for the cultivation and harvesting of marine plants, shellfish and other invertebrates for commercial purposes. Culture activity occurs on the sea floor and/ or between the high water mark and the low water mark in a natural or manufactured environment. Includes associated facilities and infrastructure such as accommodation, rock walls, fencing and anti-predator netting. Note: Also includes associated licensing for plants.
	Off-Bottom Aquaculture Siting – Marine Plants, Shellfish, Other invertebrates	Selection of areas suitable for the cultivation and harvesting of marine plants, shellfish and other invertebrates for commercial purposes. Culture activity occurs on the surface or within the water column using grow-out structures such as bags, nets, strings, trays or tubes suspended from longlines or rafts anchored to the seabed. Includes associated facilities and infrastructure. Note: Also includes associated licensing for plants.
	Off-Bottom Aquaculture Siting – Finfish	Selection of areas suitable for the cultivation and harvesting of finfish for commercial purposes. Culture activity occurs on the surface or within the water column using net cages anchored to the seabed or closed pens. Includes associated facilities and infrastructure such as anchor blocks, feed barges and sheds, accommodation, navigational markers, net storage and mooring lines.
Energy	Renewable Energy Generation	Energy generation from wave, tidal and/or other renewable marine sources as well as offshore wind energy. Includes facilities and infrastructure such as generation structures fixed or anchored to the seabed or foreshore, accommodation, and industrial facilities such as maintenance buildings. Does not include transmission or distribution lines on land or in the sea, which are included under the definition of linear utilities.
Industry	Forestry Operations - Log Handling and Storage	Marine operations associated with deposition, sorting, and processing of harvested timber. Includes related facilities and infrastructure, log dumping, log sorts and physical structures such as anchor devices, fill, pilings, permanent ways or ramps and accommodation. Does not include helicopter log drop sites and log transportation.
	Forestry Operations - Helicopter Log Drop Sites	Marine operations associated with helicopter log drop sites. Includes related infrastructure such as anchor systems, chains and boomsticks.
	Mining Operations	Marine operations associated with extracting minerals, including sand and gravel mined from foreshore, nearshore and offshore areas, as well as related facilities and infrastructure. Does not include wharves or docks used for loading and transporting mined products from upland mining operations because these are included under the definition of Level 2 docks.

	Marine Use or Activity	Description
Infrastructure	Commercial and Recreational Anchorages	A natural sheltered area or harbour used for temporary and untenured public or commercial boat anchorage Note: Anchorage restrictions do not apply to commercial towboat reserves and provincially designated boat havens, nor do they apply to vessels in distress or other emergency situations.
	Float Homes	Structures built on a flotation system, which are used for permanent or seasonal residential habitation and are not intended for navigation or as a navigational craft. Does not include floating structures used for commercial or industrial purposes (e.g., accommodations for workers).
	Floating Lodges	Floating structures and facilities used for accommodation associated with commercial tourism purposes, including floating lodges or "mother ships" moored on the seabed. May include access to camps on adjacent upland. Does not include pocket cruisers or private commercial tourism vessels
	Level 1 Docks, Wharves and Facilities	Facilities designed to accommodate commercial, community, public, or private marine use. Facilities generally do not include a concentration of marine services. Includes private and public moorage facilities, commercial and community boat ramps, docks associated with upland lodges and base camps, boat haulouts, and associated structures such as boat lifts and anchor lines. Permanently affixed to the foreshore or seabed.
	Level 2 Docks, Wharves and Facilities	Facilities designed to attract and accommodate commercial vessels or ships, or multiple vessels for commercial, industrial, community, public or private marine uses. Includes docks, wharves, piers, ramps, breakwaters, and related structures in harbours, marinas and ferry terminals, and associated marine services (e.g., ways, repairs, food services, pump-out sites, fuel). Structures may be affixed to the foreshore and seabed by pilings or floats, or involve foreshore fill. Includes commercial ports.
Tourism and recreation	Commercial Tourism and recreation	Non-extractive commercial recreation involving a paid service component such as crewed boats, guiding and interpretation, cultural tourism to interpret cultural heritage, nature-based adventure and ecotourism.
	Public Tourism and recreation	Non-extractive self-guided uses and activities include birding, boating, jet skiing, kayak staging and landing areas, motor boating, sailing, scuba diving, snorkelling, stand up paddle boarding, surfing, swimming, temporary anchorage, water skiing, whale watching, wildlife viewing and windsurfing. Public recreation does not involve a paid service component.
Research	Research	Activities designed to establish or expand knowledge of the marine environment and undertaken by educational institutions, research institutions, surveyors, research companies or consultants. Also includes citizen science, nonprofit activities and locally based research and monitoring activities.
Utilities	Linear Utilities	Underwater lines and structures including, but not limited to those used for flow, transit, distribution or broadcast of water, electricity and telecommunication services for public and/or private purposes. Generally on or under the seabed or anchored to the seabed but may also be suspended in the water column. Includes associated rights of way. Includes associated infrastructure and rights-of-way.
	Point Source Utilities	Outfalls and discharge points, including but not limited to those used for sewage, wastewater and stormwater for public, private, commercial and/or industrial purposes.

APPENDIX 2: MARINE PLAN ADVISORY COMMITTEE MEMBERS, MEETING DATES AND TOPICS

Table 39. Marine Plan Advisory Committee members

Name	Sector Represented	Role
Hussein Alidina	Marine Conservation	Alternate
Mike Ambach	Marine Conservation	Member
Jeff Beckwith	Public Recreational Angling	Member
Karl Bergman	Local Government – Skeena-Queen Charlotte Regional District (North Coast)	Member
Henry Clifton	Commercial Fisheries	Member
Mairi Edgar	Commercial Tourism	Alternate
Dan Edwards	Commercial Fisheries	Alternate
Nick Heath	Public Recreation	Alternate
Charles Justice	Public Recreation	Member
Paul Kariya	Renewable Energy	Alternate
Evan Loveless	Commercial Tourism	Member
Hermann Meuter	Marine-related Academia	Member
Dave Nicholson	Coastal Forestry	Member
Vittorio Venturini	Aquaculture	Member
Mike Viverios	Coastal Forestry	Alternate
Andrew Webber	Local Government – Kitimat Stikine Regional District	Member
Janie Wray	Marine-related Academia	Alternate

Table 40. Marine Plan Advisory Committee meeting dates and topics

Dates	Topics
Meeting #1 June 11–12, 2012	Introduction to participants, process and roles; issues and opportunities in the marine environment
Meeting #2 September 19–20, 2012	Feedback on plan components, discussion of desired future state, introduction to issues, objectives and strategies; marine plan vision statement development
Meeting #3 November 28–29, 2012	Desired future state exercise; review issues, objectives and strategies for key topics
Meeting #4 January 29–30, 2013	Review topic-specific backgrounders, issues objectives and strategies; introduction to the draft MaPP Zoning Framework
Meeting #5 March 19–20, 2013	Review issues, objectives and strategies for key topics; introduction to MaPP spatial planning tools and input datasets used to support marine spatial planning
Meeting #6 June 12–14, 2013	Review spatial planning tools developed in support of MaPP marine spatial planning; review draft high value human use layers; discussion of the MaPP analysis and zoning approach

Dates	Topics
Meeting #7 September 25–26, 2013	Review Draft 1 North Coast Marine Plan; review preliminary zoning and associated planning products
Meeting #8 November 13–14, 2013	Review draft PMZ zoning and associated planning products; review updated SMZ zoning and associated planning products
Meeting #9 March 11–12, 2014	Review draft marine plan and associated planning products; review Draft 3 spatial zoning
Meeting #10 October 20, 2014	Review of major changes to the draft spatial plan since Draft 3.1. Understand MaPP timelines and endorsement process.

APPENDIX 3: NORTH COAST CONDITIONAL STATEMENTS LIST

The following conditional statements were used in the Recommended Uses and Activities Tables to annotate all conditionally acceptable activities.

- O[1]: only research activities that are non-extractive and will not disturb sensitive or critical features and habitat are acceptable.
- O[2]: should avoid disturbance of sensitive or critical features and habitat; site limitations to be identified in an approved management plan.
- O[3]: infrastructure enabling First Nations access to adjacent reserve lands is permitted.
- O[4]: activity should be compatible with First Nations cultural use of area; site limitations to be identified in an approved management plan.
- O[5]: infrastructure and associated activities should be compatible with the purpose, vision and/or conservation objectives of protected areas; site limitations to be identified in an approved management plan.
- O[6]: Infrastructure enabling access to Dewdney and Glide Islands Ecological Reserve for service and research is acceptable.
- O[7]: activity should not interfere with existing vessel traffic in area.
- O[8]: maintenance of First Nations commercial tourism and recreation opportunities.
- O[9]: exception for potential future transmission right-of-way associated with renewable energy development.
- O[10]: adherence to established Best Management Practices for the purposes of protecting and managing ecological features and habitats.
- O[11]: existing tenures are maintained and reviewed upon renewal.
- O[12]: requires thorough consultation and statement of compatibility in siting and activity with priority tenure type holders or interested parties (associations/user groups).
- O[13]: tenure or activity should be sited a safe distance from renewable energy activities or infrastructure.
- O[14]: requires thorough consultation with the appropriate First Nation in site identification, assessment and establishment of operations.
- O[15]: tenure proposal documentation and/or other forms of communication should clearly identify the priority activity of the zone.
- O[16]: tenure or activity should be sited and operated in such a way to minimise impact on sensitive marine species and habitats and should follow established Best Management Practices for protecting these values.

- » O^{17}: requires thorough consultation and statement of compatibility in siting and activity with priority tenure type holders or interested parties (associations/user groups) when operations occur during the months of May to September.
- » O^{18}: continued use of existing Smithers Island anchorages and boat havens is permitted.
- » O^{19}: continued use of existing Moore Islands anchorages and boat havens is permitted.
- » O^{20}: Anchoring recommended in existing designated anchorage sites in Willis Bay, Connis Cove, Shaman Cove and Spicer Island-unnamed Island Nook. Designate other anchorage sites in collaboration with local First Nations.
- » O^{+}: for information on conditions that are applicable to Central Coast areas, see the Central Coast Marine Plan.

* Some conditional statements refer to management plans that will be developed in the future. Until management plans are developed, conditional activities should consider local values and meet existing legislation, regulation and/or policy requirements including Province of BC and First Nations' referral obligations. Management plans, once developed, may outline additional requirements.

APPENDIX 4: AREAS IDENTIFIED FOR FINER SCALE PLANNING

Seven areas have been identified for finer scale marine planning (see Figure 5, Chapter 4.12, and Figure 6, Chapter 4.14). Strategic marine planning in these seven areas will lead to greater knowledge, understanding and agreement about the social, cultural, economic and environmental implications of land and resource use decisions. Table 41 describes some of the ecological, cultural, and economic values found in these areas.

Table 41. Areas identified for finer scale marine planning

Areas	Area values
Stewart	Stewart is located at the head of Portland Canal. The District of Stewart, a settlement here, has a 100 year port history in supporting mining and forestry development. There are log handling, quarrying and industrial tenures within the area. Infrastructure upgrades are required for the area (e.g., upgrades to log loading infrastructure). Residents and visitors value access to the marine area for recreation. Fishing and boating are two marine-based recreational activities that occur in the area. The Bear River in British Columbia and the Salmon River in Alaska flow into the canal at this location. Both rivers are fed by glaciers and support salmon runs and grizzly bear populations.
Kitsault	The remote area of Alice Arm is located at the end of Observatory Inlet. The upland settlement of Kitsault was established in 1979 to house workers and families of a molybdenum mine. The mine was closed in 1982 and the town was evacuated. Recent development proposals for the area include Liquefied Natural Gas terminals and a terrestrial to marine transition area for pipelines. There are tourism opportunities in the region that provide a unique combination of natural beauty and historic features.
Tsimpsean Peninsula	The marine area surrounding the Tsimpsean Peninsula contains numerous historic and current values as well as potential future value for proposed development in the adjacent terrestrial area. The settlement of Port Simpson is home of the Lax Kw'alaams First Nation and the bays and passages within the area are important for Aboriginal use due to their proximity to the village. The marine area at the north end of the Peninsula is where the convergence of Portland Inlet, Work Channel and Dixon Entrance creates an important habitat for a number of species. The area is a designated potential critical habitat for Northern Resident Killer Whales and a known area of concentration for Humpack Whales. Other marine mammals found frequently in the area include Pacific white sided dolphin and harbour porpoise. Tourism is an important activity in the area. There are lodges adjacent to this area in Work Channel and Wales Harbour, and boats transit the area daily en route to the Khutzeymateen Provincial Park (Khutzeymateen/K'tsim-a-deen Grizzly Sanctuary) for wildlife viewing. The upland area of Grassy Point, on the east side of the Peninsula is the proposed location of numerous industrial developments, all in the early planning stages at the time of writing.

Areas	Area values
Kitimat	Kitimat Arm has a complex array of values. Over 8,500 people live in Kitimat, where heavy industry is a major economic driver. Kitimat Arm provides important habitat for a number of marine species and supports a growing tourism and recreation industry. Because of the complexity of uses, it is an area that requires local level planning involving appropriate First Nations, local governments and relevant agencies and local users. The Haisla First Nation has inhabited the area around the mouth of the Kitamaat River for as long as 12,000 years. Currently, Kitamaat Village on the east side of Kitimat Arm is home to the Haisla First Nation. The marine area in front of the Village is a historical and current harvesting area. The municipal town of Kitimat was built in the 1950s to support the development of an aluminum smelter. Marine based recreation, including sport fishing, boating and kayaking is important to local residents and tourists. Miskatla Inlet is one of the few areas available for safe harbor on the west side of the Channel. Loretta Channel is very accessible from Kitimat and provides excellent recreational opportunities for anchoring, diving and beach access. Access to marine based recreation is important to Kitimat residents; much of the land surrounding Kitimat is privately owned. The Kitamaat River Estuary is an important marine estuary for marine birds, mammals and fish. Numerous Salmon rivers flow into the Arm including the Kitimat, Dala and Kildala. Herring spawn in the north end of the estuary. Historically there was an eulachon run on the Kitimat and Kildala rivers that are of significant cultural importance to the Haisla.
Squally Channel	Squally Channel, between Campania and Gil Island is an important ecological and cultural area, and a potential area of importance for economic development. The channel was identified as Critical Habitat for Humpback Whales and Potential Critical Habitat for Northern Resident Killer Whales. Recently there has been an increase in sightings in Fin Whales in the area. Fin Whale use of this confined channel is unique since this species usually occupies open-ocean habitats. Squally Channel is a nursery ground for Humpback Whales, and consistent use by several female Humpbacks with their calves is well documented. The area is an important Cultural area for local travel routes and harvesting. Several species of Groundfish and Salmon are harvested across the entire channel. The Gitga'at First Nation's most important marine plant harvesting site, as well as shellfish harvesting sites, are located in the area. Frequent travel by small vessel to access harvesting sites occurs year-round. Commercial fishing is also important in the area. Halibut and salmon fishing occur throughout most of the year, and First Nations comprise a large portion of those who are participating in the fisheries. Other fisheries, such as dive fisheries for invertebrate species, also occurs. Marine based tourism is popular in the area, which further increases small vessel traffic. Gitga'at owned and operated tourism has and will continue to increase. Located within the Great Bear Rainforest, the area draws visitors seeking nature based tourism activities such as Whale-watching, Spirit Bear viewing, kayaking, camping and sport-fishing. Seasonal fishing and ecotourism lodges have been located in nearby Barnard Harbour. Recreational boating, including sailing tours, is also popular in Squally Channel. Cargo ships travel through Squally Channel as they transit to and from terminals located at the head of Douglas Channel. Shipping traffic is currently characterized as low density, however, shipping may increase to unprecedented levels in the area as there are projects and terminals currently under assessment in the region. Nearby, there are four conservancies designated under the BC Parks Act: Lax Ka'Gaas/Campaina Island, Ktisgaidz/ Macdonald Bay, Lackul-Jeets/Fin Island and Monckton Nii Luutiksm.

Areas	Area values
Wright Sound	Wright Sound is located at the mouth of Douglas Channel at the confluence of Douglas, Grenville, Whale and Ursula Channels, and Verney, Lewis and Cridge Passages. Located directly in front of Hartley Bay village, home and cultural foundation to the Gitga'at people, Wright Sound is an important cultural area. This area is a travel hub, where small boats go back and forth between Hartley Bay and other areas for cultural and economic purposes. Safe, unencumbered access to and from Hartley Bay to cultural, harvest and economic sites within and adjacent to the area is vital to the well-being of the Gitga'at people and critical for Gitga'at food-security. Many of Gitga'at's most highly-used harvest sites are within the area, including autumn and winter harvest areas when travel in small boats to further places is far more limited. The area is also a travel hub for people and provisions moving between Hartley Bay and larger communities like Prince Rupert and Kitimat. Marine-based tourism in the area also contributes to small-vessel traffic. Gitga'at owned and operated tourism ventures for Spirit-Bear viewing and Whale-watching continue to increase in the area. Other activities including sport-fishing, kayaking and sail-boat tours occur. Further development of marine-based tourism focused on Hartley Bay is planned. The channel is an important area for cetaceans. It has been identified as Critical Habitat for Humpback Whales and Potential Critical Habitat for Northern Resident Killer Whales. Recently there has been an increase in sightings in Fin Whales in the area. Fin Whale use of this confined channel is unique since this species usually occupies open-ocean habitats. Wright Sound is a nursery ground for Humpback Whales, and consistent use by several female Humpbacks with their calves is well documented. There are two BC Parks Conservancies adjacent to Wright Channel that protect terrestrial and marine foreshore habitat - K'distsausk/ Turtle Point and Lackul-Jeets/Fin Island. Gitga'at's burial grounds are located at Turtle Point. Cargo ships travel through Wright Channel as they transit to and from terminals located at the head of Douglas Channel. Shipping traffic is currently characterized as low density, however, shipping may increase to unprecedented levels in the area as there are projects and terminals currently under assessment in the region.
Observatory Inlet	Located at the head of Portland Inlet, Observatory Inlet is a remote area with a complex array of ecological, cultural, and economic values. A diversity of marine habitat types, including intertidal gravel beaches, sub tidal mud and sand areas, rocky outcrops, and estuarine mud flats, support rich marine life. Abundant marine species include Chinook and coho salmon, Dungeness crab, clams, mussels, and cockles. Marine mammals found in the area include harbor seals, harbor porpoises, sea lions, Dall's porpoises, humpback whales, and killer whales. Tourism opportunities in the region provide a unique combination of natural beauty, rich cultural experiences, and historical features. Anyox, a small company-owned mining ghost town, is located here. Some building shells still exist and provide opportunities for historical tourism. There are commercial recreational Land Act tenures in adjacent terrestrial areas. The Metlakatla First Nations has interests in developing opportunities for sustainable marine tourism and recreation in the marine environment. Under the Nisga'a Treaty the Nisga'a have rights to harvest fish (which include shellfish and marine mammals) aquatic plants and migratory birds within the Nass Area. More specifically, the Nisga'a Treaty establishes bivalve harvesting areas in a number of areas, including Observatory Inlet, within which Nisga'a citizens have the right to harvest intertidal bivalves (littleneck clams, butter clams, horse clams, cockles, mussels and manila clams) for domestic purposes. The area is adjacent to the Ksi xts'at'kw/Stagoo and Larcom Lagoon Conservancies.

APPENDIX 5: DESCRIPTIONS OF INTERNATIONAL UNION FOR CONSERVATION OF NATURE CATEGORIES

Table 42. Descriptions of IUCN categories

IUCN Category	Description
Ia	Strictly protected areas set aside to protect biodiversity and also possibly geological/ geomorphological features, where human visitation, use and impacts are strictly controlled and limited to ensure protection of the conservation values. Such protected areas can serve as indispensable reference areas for scientific research and monitoring. Category 1a are often small; large areas exist with low human population density and little interest in tourism.
Ib	Usually large unmodified or slightly modified areas, retaining their natural character and influence, without permanent or significant human habitation, which are protected and managed so as to preserve their natural condition. Category Ib are usually large, relatively speaking, to provide enough space for large-scale natural ecosystem dynamics or to experience solitude. Relatively small areas may be established in the hope that they can be expanded in the future.
II	Large natural or near natural areas set aside to protect large-scale ecological processes, along with the complement of species and ecosystems characteristics of the area, which also provide a foundation for environmentally and culturally compatible spiritual, scientific, educational, recreational and visitor opportunities. Category II are usually large to conserve ecosystem processes. Exceptions include small areas that are functionally ecosystems.
III	Set aside to protect a specific natural monument11, which can be a landform, seamount, submarine cavern, geologic features such as a cave or even a living component such as a specific coralline feature. Category III is usually small and often has high visitor value.
IV	Aim to protect particular species or habitats and management reflects this priority. Many category IV protected areas will need regular, active interventions to address the requirements of particular species or to maintain habitats, but this is not a requirement of the category. Category IV is often small to protect individual species or habitats. Larger areas may be protected but will need regular management to function as an IV.
V	Areas where the interaction of people and nature over time has produced an area of distinct character and significant ecological, biological, cultural and scenic value: and where safeguarding the integrity of this interaction is vital to protecting and sustaining the area and its associated nature conservation and other values. Category V areas are usually large because the mosaic of approaches for conservation gains suggests a larger area. Exceptions may be smaller areas for particular species or races.
VI	Areas that conserve ecosystems and habitats, together with associated cultural values and traditional natural resource management systems. They are generally large, with most of the area in a natural condition, where a proportion is under low-level non-industrial sustainable natural resource management and where such use of natural resources compatible with nature conservation is seen as one of the main aims of the area. Category VI areas are usually large because the extensive nature of management needed however some marine areas in this category may be small.

APPENDIX 6: MAPP GLOSSARY

Adaptive management – A monitoring and management approach that assists in decision-making related to science-based processes. It is a prescriptive, formalized, systematic method that enables management to learn from the outcomes of implemented management actions.

Aboriginal Knowledge – encompasses a range of knowledge types passed from generation to generation by oral traditions, ceremonies and practices. Aboriginal Knowledge can be tied to a geographic area or ecological context; it can be both ancient and contemporary, and is expanding and adapting constantly. Within the MaPP planning process the term Aboriginal knowledge is used in reference to knowledge held by First Nations individuals and communities.

Biodiversity – The variability among living organisms from all sources, including terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems.

Blue Carbon – the carbon captured by living coastal and marine organisms and stored in coastal ecosystems.

Capability mapping – The mapping or modeling of biological and physical environmental variables that, when measured, provide spatially-explicit and quantitative information for the survival and reproduction of a species or population.

Carrying capacity (social, ecological, cultural) – The upper limit of a specific activity that may occur before causing unacceptable change to the natural ecosystem or to valued social and cultural systems in a particular area or location. Capacity can be measured by a number of units (anglers, visitors, lodges, bed-nights, visitor-days, aquaculture farms, aquaculture production by species, etc.), crowding tolerance, percentage of an area dedicated to a particular use, or other characteristic of an activity, value or feature that may be affected.

Cetacean – an order of marine mammals commonly known as whales, dolphins and porpoises.

Commercial fisheries – Harvest of wild finfish and invertebrates for commercial purposes.

Conservancy – Land designated by the Province of British Columbia in accordance with the *Park Act* and the *Protected Areas of British Columbia Act* to maintain biological diversity; natural environments; First Nations' social, ceremonial and cultural uses; and recreational values. Conservancies were developed as a result of the Coast Land Use Decision.

Conservation – The maintenance or sustainable use of the Earth's resources in order to maintain ecosystem, species and genetic diversity and the evolutionary and other processes that shape them. In the context of the International Union for the Conservation of Nature definition of a marine protected area, conservation refers to the in situ maintenance of ecosystems and natural and semi-natural habitats and of viable populations of species in their natural surroundings.

Cultural area – Sites and features of importance to First Nations including intertidal archaeological sites, travel routes and places associated with the oral histories of the Nations. Cultural areas are broad areas that are tied directly to Aboriginal and cultural resources and include areas where indigenous activities, including harvesting and production, were, and/or are, pursued. Many sites and features do not exhibit any obvious

infrastructure or evidence of use but are of significant social and cultural importance to First Nations. See also, Cultural Resource, Cultural Site.

Cultural resource – A broad term that encompasses areas, activities, sites, objects and resources of cultural value to First Nations (MaPP 2013a). See also, Cultural Area, Cultural Site.

Cultural Site – a geographically specific site of cultural importance to a First Nation. Such sites may not have any visible structures or features. See also, Cultural Resource, Cultural Area.

Cumulative effects (CE) – Environmental, social and economic changes caused by the combined and incremental effects of past, present and proposed activities and events.

Cumulative effects assessment (CEA) – An assessment of the incremental effects of an action on environmental, social and economic values when the effects are combined with those from other past, present and foreseeable future actions.

Ecological Reserve – Ecological reserves are areas selected to preserve representative and special natural ecosystems, plant and animal species, features and phenomena. Scientific research and educational purposes are the principal uses of ecological reserves. Ecological Reserves were first established under the *Land Act* in 1969.

Ecological resilience – (1) The ability of a system to undergo, absorb and respond to change and disturbance while maintaining its functions and controls (Carpenter et al. 2001). (2) The amount of change or disturbance that can be absorbed by a system before the system is redefined by a different set of processes and structures.

Ecosystem – A dynamic complex of plant, animal and microorganism communities and their non-living environment interacting as a functional unit.

Ecosystem-based management (EBM) – An adaptive approach to managing human activities that seeks to ensure the coexistence of healthy, fully functioning ecosystems and human communities. The intent is to maintain those spatial and temporal characteristics of ecosystems such that component species and ecological processes can be sustained, and human well-being can be supported and improved.

Ecosystem services – The benefits people obtain from ecosystems, including provisioning services such as food and water; regulating services such as regulation of floods, drought, land degradation, and disease; supporting services such as soil formation and nutrient cycling; and cultural services such as recreational, spiritual, religious and nonmaterial benefits.

Effect – Any response by an environmental or social component to an action's impact. Under the *Canadian Environmental Assessment Act*, "environmental effect" means, in respect of a project, "(a) any change that the project may cause in the environment, including any effect of any such change on health and socio-economic conditions, on physical and cultural heritage, on the current use of lands and resources for Traditional purposes by aboriginal persons, or on any structure, site or thing that is of historical, archaeological, paleontological or architectural significance and (b) any change to the project that may be caused by the environment, whether any such change occurs within or outside of Canada".

Endangered species – Species that are threatened with immediate extinction or extirpation if the factors threatening them continue to operate. Included are species whose numbers have been reduced to a critical level or whose habitats have been so drastically reduced that they are deemed to be in immediate danger of extinction.

Fisheries Economy – All of the direct and indirect social, cultural and economic benefits derived from current commercial fishing, recreational fishery service providers, recreational fishing and aquaculture. The province and partner First Nations have a vital interest and role in this economy, including fish and seafood processing, distribution, retailing, business development and skills training, disposition of tenures, and maintenance of associated infrastructure.

Foreshore – (1) In the context of tenuring lands in British Columbia, the foreshore is "that land in tidal areas lying between the high tide and the mean low tide and that land in non-tidal areas that is alternatively covered by water and exposed with the normal rise and fall of the level of the body of water, i.e., that land between the ordinary high and low water mark". (2) Generally speaking, foreshore is the part of the shore between the normal high and low water marks, or between the water and cultivated or developed land.

Geographic Response Plan (GRPs) – Geographic-specific response plans for marine-related incidents. They include response strategies tailored to a specific beach, shore or waterway, and are meant to avoid or minimize impact.

Heritage Resources – Objects, sites, and values related to non-Aboriginal history in BC.

Indicator – Quantitative/qualitative statements or measured/observed parameters that can be used to describe existing conditions and measure changes or trends over time.

Indigenous Peoples' and Community Conserved Territories and areas (ICCAs) – Natural and/or modified ecosystems containing biodiversity and cultural values and ecological services that are conserved by Indigenous peoples and local communities, through customary laws, practices or traditions or other means. Indigenous Peoples' and Local Community Conserved Areas and Territories have been implemented for economic, cultural, spiritual and aesthetic purposes in different parts of the world but are not a legal designation in Canada at this time.

International Union for Conservation of Nature – A global environmental organization providing a neutral forum for governments, nongovernmental organisations, scientists, business and local communities to find practical solutions to conservation and development challenges.

Intertidal – *see foreshore.*

Local knowledge – Current knowledge held by people within a community. It can be gained by any individual who has spent considerable time on the land or water observing nature and natural processes.

Marine Pollution – As defined in the *Canadian Environmental Protection Act*, substances or energy directly or indirectly introduced into the sea by humans that result or may result in: hazards to human health; harm to living resources or marine ecosystems; damage to amenities; or interference with other legitimate uses of the sea (Canada 2014). Marine pollution includes substances that enter the sea directly or indirectly from marine or land based activities, and includes a wide variety of organic discharges, debris and biological, chemical, hydrocarbon and energy inputs (e.g., vessel traffic noise, seismic testing and thermal pollution from processing plants and energy-generating facilities) (Faggetter 2008).

Marine Protected Area (MPA) – An area legally established to protect all or a portion of the sea surface, water column, seabed and/or associated flora, fauna and recreational, scientific, cultural and historical features, and may include an area established under Canada's Oceans Act, National Marine Conservation Areas Act, National

Parks Act, Canada Wildlife Act, Migratory Birds Convention Act, or British Columbia's Park Act, Protected Areas of British Columbia Act, Ecological Reserve Act, Environment and Land Use Act, Land Act or Wildlife Act.

Marine Spatial Planning – A public process of analyzing and allocating the spatial and temporal distribution of human activities in marine areas to achieve ecological, economic, and social objectives that usually have been specified through a political process.

Marxan – A decision support tool software designed to aid systematic reserve design for conservation planning. Using stochastic optimisation routines (Simulated Annealing) Marxan generates options for spatial reserve systems that achieve particular biodiversity representation goals while minimizing the area required.

Mitigation – A means of reducing the significance of adverse effects.

Monitoring – Involves routinely observing or measuring something (e.g., people, species, effects) and recording the data consistently in order to compare changes before and after an action is implemented and establish trends over time.

Nearshore – The sub-tidal area below the low tide mark (i.e., below zero tide), generally extending to the 20 metre depth.

Pelagic – Organisms that swim or drift in oceans or open waters, as opposed to those that live in waters adjacent to land or inland. Pelagic organisms include plants, fish and oceanic birds.

Precautionary Principle – The precautionary principle denotes a duty to prevent harm, when it is within our power to do so, even when all evidence is not in. This principle has been codified in several international treaties to which Canada is a signatory.

Protection – Any regulatory or other provision to reduce the risk of negative impacts of human activities on an area.

Recreational fisheries – Recreational angling, collecting of shellfish, harvesting of finfish and invertebrates by residents and visitors for personal use.

Recreational fishery service provider – A person or business engaged in providing services such as a fishing lodge and/or carrying passengers on a charter vessel for the primary purpose of recreational fishing, whenever valuable consideration passes directly or indirectly to the person or business.

Refugia – A habitat that organisms retreat to, persist in or can potentially expand from under changing environmental conditions.

Resilience – *see Ecological Resilience*

Restoration – The act or process of assisting the recovery and management of damaged ecosystems, restoring internal processes, as well as ecosystem components. Critical to restoration is the identification and control of the cause(s) of ecosystem degradation . "Restoration" is considered to broadly encompass a continuum of degrees or stages of restoration and various terms in different statutes and other legal mechanisms, e.g., "restoration", "rehabilitation", "remediation", and "reclamation".

SARA – Federal *Species At Risk Act* (S.C. 2002, c. 29).

Seabed – The ground under the sea; the ocean floor.

Stakeholders – Individuals or groups of people with particular interests in an issue or area. (DFO 2002).

Suitability or Suitability mapping – The mapping or modelling of species or activity viability based on ecological capability combined with social, economic, resource use, infrastructure, marketing and/or cultural values and other parameters.

Sustainable use – Applicable only to renewable resources, and refers to using them at rates within their capacity for renewal. Minerals, oil, gas, and coal are effectively non-renewable and thus cannot be used sustainably. However the length of time that these non-renewable resources are available can be extended by recycling materials, using less of a resource to make a product, and switching to renewable substitutes.

Target – A reference point for an indicator.

Territory – Means the lands, waters and resources claimed as aboriginal or treaty rights, including aboriginal title, by Aboriginal peoples.

Threshold – A limit of tolerance of a valued ecosystem component (VEC) to an effect that, if exceeded, results in an adverse response by that VEC. The level of magnitude of a system process at which sudden or rapid change occurs. A point or level at which new properties emerge in an ecological, economic or other system, invalidating predictions based on mathematical relationships that apply at lower levels.

Wildlife Management Area – An area of land designated by the Province of British Columbia under section 4(2) of the *Wildlife Act* for the benefit of regionally to internationally significant fish and wildlife species or their habitats. Conservation and management of fish, wildlife and their habitats is the priority in a Wildlife Management Area, but other compatible land uses may be accommodated (British Columbia 2013b).

Zoning – The process of designating spatial area(s) using defined geographic coordinates, with each zone type or category having a distinct objective or purpose, description, management recommendation or direction, name and/or identifier.

APPENDIX 7: POTENTIAL EBM INDICATORS

The following preliminary EBM indicators (Table 43) were developed for the MaPP study area. Additional indicators specific to the North Coast may be selected during implementation.

Table 43. Potential ecosystem based management indicators

Ecological Indicators

Ecological components	Recommended indicators
Habitat Quality	Measure of functional estuarine habitat *additional indicators of all habitats will be identified
Community composition	Change in community composition
Trophic dynamics	Not recommended at this time
Key species and communities	
Birds	Shorebird abundance during spring/fall stopover Population size of breeding seabirds
Bivalves	Mussels
Cetaceans	Habitat use by marine mammals
Coastal riparian vegetation	Extent of intact coastal riparian vegetation
Corals and sponge reefs	Not recommended at this time
Crustaceans	Abundance and size of key crustacean species
Echinoderms	Urchin abundance and distribution
Eelgrass	Eelgrass distribution and biomass
Forage Fish	Forage fish community composition Herring spawn distribution and biomass
Groundfish	Benthic fish community composition
Introduced / invasive species	Invasive / non-native species distribution and abundance
Invertebrates	Benthic macro-invertebrate species community composition
Jellyfish	Not recommended at this time
Kelp forests	Kelp forest canopy cover
Macroalgae	Not recommended at this time
Pacific Salmon	Salmon abundance and distribution of adults by species
Pelagic fish	Not recommended at this time
Phytoplankton	Chlorophyll-a from satellite and/or in situ surveys
Sea otters	Sea otter presence / abundance
Seal	Seal abundance
Zooplankton	Not recommended at this time

Environmental states and drivers	Recommended indicators
Atmospheric forcing	Climate indices
	Wind speed and direction
Chemical oceanography	Dissolved carbon dioxide
	Dissolved oxygen
	Nutrient concentrations
	Ocean pH
Physical oceanography	Sea surface temperature
	Ocean salinity
Sea level	Sea level height
Sediment processes	Suspended sediments
Storms and waves	Frequency and intensity of storms
Watershed conditions	Freshwater runoff (sediment, volume, timing and temperature)
Wind driven upwelling/ downwelling	Not recommended at this time (redundant with wind)

Human Pressures	Recommended indicators
Aquaculture	Number, size, location and type of finfish and shellfish aquaculture farms in BC
Coastal development	Coastal population density
	Shoreline armoring
	Square kilometers of forestry, agriculture, urban land cover
Fisheries and fisheries management	Number of pacific salmon released from hatcheries
Habitat modification	Habitat destructed by fishing
	Coral and sponges occurrences in trawl observer data
	Seafloor alteration via dredging, drilling, dumping and/or construction
Ocean noise	Anthropogenic ocean noise at specific locations
Oil spills	Number, location and extent of coastal oil pollution events
Pollution and contamination	Water quality (turbidity, pollution, nutrient enrichment)
	Area of sediment with contaminant levels above SQ guidelines
	Shifts in point sources of pollution
Sedimentation and turbidity	Not recommended at this time (redundant with monitoring driver sediment processes)
Shipping and boating	Footprint of commercial and recreational boats

Human Well-being Indicators

Institutional Indicators

Institutional Follow-through: Administration

1. Proportion of performance measures in the service plans of relevant government departments or agencies that are: not achieved, partially achieved, achieved, exceeded.
2. Changes in marine management service levels by government departments (by survey of managers) where budgets are stable or declining.
3. Changes in costs of marine management tracked over time (from MRAG, 2013): a) changes in government costs (budgets): Federal, First Nations, Provincial, Local; b) changes in management costs incurred by sectors.

Institutional Management and Follow-through: Assessment

1. Percentage of region with current/active community, sub-regional, regional assessments for: socio-economic, ecosystem, cultural, and climate change risks and vulnerabilities. Number of assessments that incorporate cumulative effects. See 9 below.
2. Number of assessment strategies in place in the region that involve collaboration in a) information sharing and b) monitoring efforts among governments, Nations, agencies, research institutes, ENGOs (see also *Administration*)

Institutional Management and Follow-through: Programs

1. Proportion of performance measures of relevant government departments or agencies that are: not achieved, partially achieved, achieved, for the following programs:
    - Climate change
    - Emergency response
    - Sustainable Tourism
    - Sustainable economic development
    - Mitigation of human impacts on ecosystems
    - Restoration and protection of ecosystems
    - Infrastructure development
    - Transmission of cultural knowledge, preservation of cultural identities
    - Monitoring and surveillance
2. Changes in service levels by government departments where budgets are stable or declining for the above programs.
3. Changes in costs of program management for the previously listed programs tracked over time: a) changes in government costs (budgets): Federal, First Nations, Provincial, Local; b) changes in management costs incurred by sectors.

Institutional Authority: Regulations and Compliance

1. Compliance: Number of warnings, citations or infractions issued for non-compliance per resource use activity or sector (Merritt 2013)

Institutional Authority: Plans and Policy

1. Percentage of plans and legislative policies relevant to the planning area that incorporate and demonstrate commitment to adaptive management
2. Percentage of Plans for the MaPP region or sub-regions that a) use measures or targets that allow for performance assessment and b) are being met, nearly met, or exceeded.

Institutional Authority: Formal Agreements: Protocols, Agreements, and Legislation
1. Percentage of total pieces of formal agreements (legislation, by-laws, agreements, MOEs, protocols, treaties) that have performance measures that assess a) their level of implementation; and b) their effectiveness at achieving their objectives
Political Wellbeing: Governance Relationships
1. Representation: Indicator 1: Representation—Percentage of collaborative planning bodies with complete/near complete representation and participation of relevant governments/ agencies. (MaPP Human Wellbeing and Governance Indicators Workshop 1, 2)
2. Collaboration Index: 1) Number of government to government agreements (percentage of area covered by government to government agreements (Sheltair group, 2006, 2008); 2) Number of active treaty disputes; 3) Number of inter-measures agreements or other pre-treaty agreements; 4) Number of court cases regarding aboriginal rights and title (MaPP Human Wellbeing and Governance Indicators Workshop 2)
Political Wellbeing: Leadership and Participation
1. Engagement: % of management processes using the following engagement mechanisms: a) delegated management bodies; b) shared/joint/co-management; c) regular advisory bodies; d) periodic consultative sessions; e) information sharing events and mechanisms (websites, conferences, etc); f) no engagement. (MaPP Human Wellbeing and Governance Indicators Workshop 2)
2. Quality of Leadership: Satisfaction survey in relation to quality of leadership in local governance and marine management (empowering others, balancing opportunities and risks, vision, coming to solutions, managing conflict) (MaPP Human Wellbeing and Governance Indicators Workshop 1)

Social Indicators

Community Wellbeing: Human Connections to Place and Environment
1. Non-market Connections: Number of residents engaged in self-provisioning, and number and type of species used in self-provisioning (MaPP Human Well-being and Governance Indicators Workshop 1 2013)
2. Market Connections: Number of active (at least one landing a year) fishing boats and number of boat trips per year (Merritt 2013)
Cultural Continuity
1. Valuing Culture: Self-assessed value (high, medium, low) placed on the following: Speaking a Traditional language; practicing Traditional skills (harvesting, arts); being part of Traditional cultural events and ceremonies; incorporating Traditional practices, manners, and protocols at public events or political processes (adapted from Ura et al. 2012).
2. Language: a) Number of speakers fluent in Traditional languages per Nation (Sheltair Group 2006, Rubus EcoScience Alliance 2007, Merritt 2013) and b) Number of local residents participating in Traditional language education (including demographic of participants: age, gender, ethnicity).
Knowledge and Education
1. Educational Attainment: Mean years of schooling, expectant years of schooling per region (HDI) or b) Percentage of population (25-54 yeas) without high-school and post-secondary certification by school district or health authority (BCStats, 2013)
2. Local Training to Employment: Number of local training programs and employment placement rates after graduation from the programs (from Sheltair 2006, Loucks and Day, 2011, MaPP Human Well-being and Governance Indicators Workshops 1, 2)

3. Integrated Knowledge: (see also *Assessment*) » % of marine management processes regularly using knowledge from the following sources when making decisions or plans: a) agency; b) other agencies or governments; c) First Nations; d) users; e) non-profits); f) community/local; g) academic. » % of marine management processes regularly using knowledge from the following disciplines to formulate decisions or plans: a) biological/ecological; b) social; c) economic; d) cultural. » % of marine management processes regularly using knowledge beyond a species or subject being directly managed: a) cumulative effects; b) ecosystem services; c) broader social consequences; d) broader economic consequences.
Personal Wellbeing: Physical, Mental, and Spiritual Health
1. Physical Health: Life expectancy at birth per region (HDI, 2012)
2. Emotional/Spiritual Health: » Self-assessed level of personal trauma experienced (by survey): Residential School; Major economic hardship; Personal traumatic event » Self-assessment of support levels: community support services, information about coping strategies, peer support, family support » Self-assessment of level of life satisfaction: How would you rate your present life situation, how do you see your life prospects. Rate on a scale of 1 to 10 (Gallup 2012)
Population/ Demographics
1. Demographics: Annual percent change in population size per community, including total population, age, gender, and ethnic composition (from Merritt, 2013), Watson 2013)
Work: Employment
1. Participation: Rates of employment and unemployment and/or participation per sub-region or community and by occupation or industry (Clayoquot Biosphere Trust 2010; Fraser Basin Council 2010; BCStats, 2013; Watson 2013).
Work: Job Satisfaction
1. Self-assessed job satisfaction ratings in marine-related sectors.

Economic Indicators

Work—Labour Market: Local Labour Capacity
Number and percentage of workers in the Plan Area who: 1. Are permanent residents (of community or area) - First Nations and non-First Nations 2. Are temporary workers/residents 3. Commute from a home community
Financial Capacity— Distribution of Wealth: Income Disparity
1. Number of income earners in the lower two income brackets (less than $15,000, and $15,000 to $24,999 annually) as a percentage of higher income earners for the Plan Area ($35,000+ and $50,000+ categories)
Financial Capacity—Distribution of Wealth: Regional Wealth
Wealth as indicated by either: 1. Gross regional income per capita 2. Family income: Median household income per sub-region

Financial Capacity: Local Investment

1. Local Investment, consisting of:
   - Rate of marine related infrastructure development (number of new developments and cost scale).
   - Number of new local businesses, business incorporations
   - Commercial loan levels (dollars per Plan Area) (Rubus EcoScience Alliance, 2007)
   - Level of third party investment in social capital (ex. grant funding) and proportion of investment from different sources (private financial; institutions; government; foundation)
   - Percentage of resource revenues per sector directed to support: local community based programs or infrastructure, resource stewardship

Economic Structures and Systems: Diversity and Interdependence

1. Employment per sector per region and sub-region

Economic Structures and Systems—Resilience and Sustainability: Age of businesses and local ownership

1. Indicator 1: Ratio of businesses that have existed under and over 7 years
2. Indicator 2: Percentage of businesses operating in the region that are owned locally

Economic Access—Resource Access and Allocation: Local Access

1. Number and ratio of commercial and recreational licenses and tenures held:
   - Locally and non-locally
   - By First Nations and Non-First Nations by sector (including: fisheries, aquaculture, adventure tourism/ commercial recreation, mineral exploration, energy production, and other natural resource tenures).

2. Tenure application process: 1) How many new tenure applications have been made in a time period; b) What type of economic activity; b) how long has it taken to process; c) ratio of acceptance to rejection; d) if rejected, why?; e) if accepted, was there significant opposition and from whom?

Economic Access—Market Access: Local Access

1. Number and percentage of a) locally produced marine related goods and services, and, b) locally produced value-added marine related goods and services, that are traded:
   - Locally or regionally
   - In Canada
   - Internationally

Productivity—Costs and Barriers: Yearly Costs, Net Profit/Loss, % of business profitable vs. non-profitable (per Sector)

1. Average yearly costs (per sector) as measured by:
   - Costs of sales (direct expenses, broken down)
   - Operating expenses (indirect expenses, broken down)
2. Net Profit/Loss
3. % of businesses profitable vs. non-profitable

Productivity—Economic Output: Primary Economic Output

Primary economic output per marine sector by volume and value

Productivity—Growth: Business Licenses

1. Number of business licences, including:
   - The number of business licenses issued each year
   - The number of *new* business licences issued each year
   - The number of new business incorporations and partnerships in the region registered annually

Physical Indicators

Human Living Environment
» Living Standards: number of dwellings requiring major repair
» Density: Number, size and density of communities
Safety and Emergency Response
» Changes over time of the number, distribution and age of marine emergency response facilities throughout the region
» Change over time of number of Coastguard and Search and Rescue vessels
» Change over time of the number of scheduled surveillance trips by the Coastguard
» Change over time of the number of Coastguard and Search and Rescue stations/groups
» Number of incidents in which the Coastguard and Search and Rescue was involved
» Changes in the average length of response time by the Coastguard and Search and Rescue
» Changes over time of the number, distribution and age of marine navigational aids
» % change between staffed and automated/decommissioned lighthouses
Marine Related Infrastructure: Marine Access
» Changes over time of the number, distribution and age of major ports and marine terminal facilities
» Changes over time of the types, numbers and sizes of vessels entering and exiting ports and marine terminals
» Changes over time of volumes and values of goods entering and exiting ports
» Changes over time of the number, distribution and age of Small Craft Harbours and marinas
» Changes in wait lists for Small Craft Harbour berths
» Changes over time of the number, distribution and age of public wharves, including Transport Canada wharves
» % of marine infrastructure (ports, docks, wharves) with 'green' certification
Marine Related Infrastructure: Marine Fuel, Maintenance and Service Facilities
» Changes over time of the number, distribution and age of shipyards, repair and storage facilities
» Changes over time of the number, distribution and age of waste disposal services (marine related)
» Changes over time of the number, distribution and age of marine fuel supply facilities
» % of marine infrastructure (fuel, maintenance, disposal services) with 'green' certification
Fish Harvesting Infrastructure
» Number and type of fishing boats in the water with different purposes (commercial, cultural, recreational, commercial/recreational)
» Number and types of boat ownership in the water (local vs non-local)
» Number of fishing trips made each year (by different fishing sectors and license types)
Processing Infrastructure (P6)
» Number of local facilities that enable businesses to differentiate and/or brand products through harvesting, processing or experiential differences
Resource Use: Marine Transit
» Number of designated marine shipping and transport routes
» Usage levels in marine shipping and transport routes

Resource Use: Seafood: Wild and Farmed
» Fishing Effort
» Proportion of Total Allowable Catch that is caught
» Number of days per year that fisheries are open
Seafood Sustainability Index including:
» Total current seafood production from Plan Area
» Regional seafood landings
» Regional seafood processing
» Regional consumption of seafood
» Export of seafood landed in the region
» Fish populations status, by species
» % of Plan Area with economically viable commercial fisheries potential that is closed
» Number of past or potential commercial fisheries that are closed
» Top five reasons for areas or fisheries being closed or inactive
» % of Plan Area with economically viable aquaculture potential
» % of Plan Area designated in plans for aquaculture production
» % of designated areas with active aquaculture production
» % of designated areas in de-commissioning or unutilized
» Top five reasons for designated aquaculture areas not being utilized for aquaculture
» Evaluation of pollution levels and safety of relevant species for human consumption
» Habitat impact levels from aquaculture
» Levels of aquaculture-derived pharmaceuticals in fresh and salt water ecosystems
» Disease and parasite interactions between wild enhanced and aquaculture
» Fishery methods: seafloor disturbances
» Discard of catch at sea, including estimated mortality levels
Resource Conservation (P9/In4)
» Percentage of Plan Area designated with official protected area status
Resource Use: Designation of Space (In5/P10/E2)
» Changes in time of percentage of Plan Area designated for specific uses

North Coast - Skeena First Nations
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